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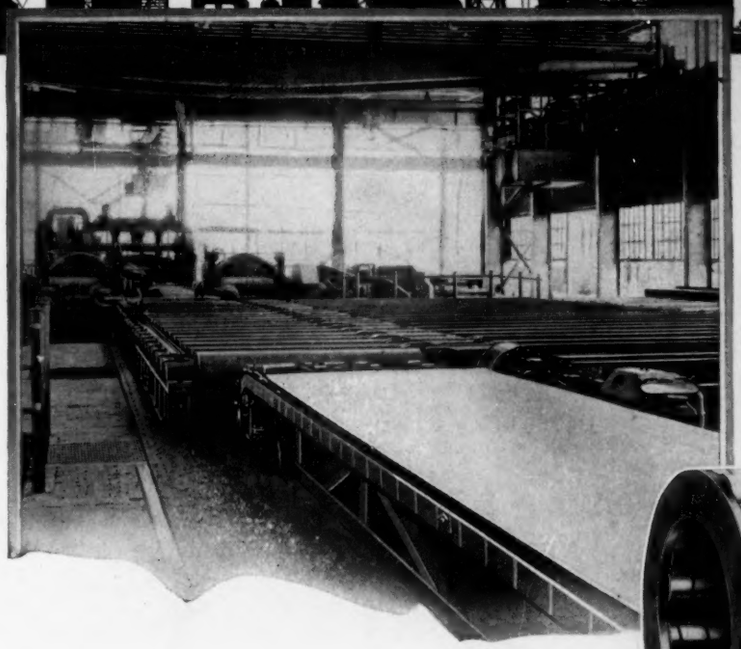
Contents—1245; Market Review—1250

IRON TRADE REVIEW

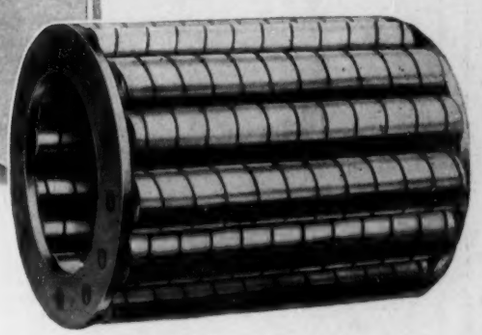
Registered U. S. Patent Office

Published Weekly | CLEVELAND, O., NOVEMBER 11, 1926 | Six Dollars a Year

VOL. LXXIX. No. 20 *Entered as second-class matter at the post-office in Cleveland, Ohio, under the act of March 3, 1879* Single Copy 25 Cents



Hyatt equipped plate mill, shear table and inspection bed.



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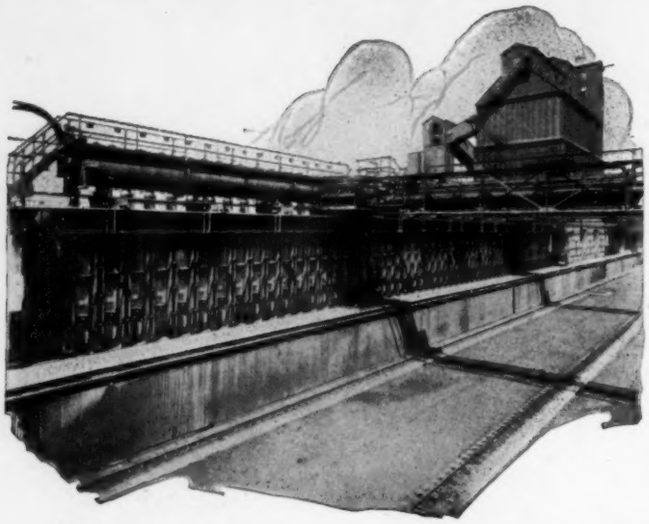


The Following Companies Are Being Served With Koppers Becker Type Combination Coke and Gas Ovens

PLANTS IN OPERATION

	Location	No. of Ovens	Annual Car Cap.—Tons
Chicago By-Product Coke Co.	Chicago, Illinois	5	42,413
Weirton Steel Company	Weirton, West Virginia	37	392,375
Battle Creek Gas Company	Battle Creek, Michigan	11	54,000
Columbia Steel Corporation	Provo, Utah	33	365,000
Consumers Power Company	Saginaw, Michigan	19	72,000
Trumbull Cliffs Furnace Co.	Warren, Ohio	47	441,600
Diamond Alkali Company	Painesville, Ohio	23	204,400
Bethlehem Steel Company	Buffalo, New York	114	940,800
Winnipeg Electric Company	Winnipeg, Canada	17	84,388
Utica Gas & Electric Company	Utica, New York	21	104,244
Northern Indiana Gas & Electric Co.	Fort Wayne, Indiana	19	94,316
By-Products Coke Corporation	South Chicago, Illinois	110	1,000,000
Carnegie Steel Company	Clairton, Pennsylvania	366	2,743,048
Consumers Power Company	Jackson, Michigan	15	50,000
Republic Iron & Steel Company	Youngstown, Ohio	61	621,800
Lynn Gas & Electric Company	Lynn, Massachusetts	11	54,000
Republic Iron & Steel Company	Birmingham, Alabama	57	720,500
Illinois Steel Company	Gary, Indiana	138	1,259,250
Rochester Gas & Electric Corp.	Rochester, New York	60	273,885
Jones & Laughlin Steel Corp.	Aliquippa, Pennsylvania	122	1,100,000
Inland Steel Company	Indiana Harbor, Indiana	73	620,916
Total ovens in operation		1,359	11,238,935

PLANTS UNDER CONSTRUCTION

Consolidated Gas Co.	New York, New York	74	638,750
Utica Gas & Electric Company	Utica, New York	21	104,244
Wheeling Steel Corporation	Follansbee, W. Va.	51	347,000
Weirton Steel Company	Weirton, West Virginia	49	438,000
Central Furnace Company	Massillon, Ohio	49	438,000
Republic Iron & Steel Company	Youngstown, Ohio	43	400,500
Bethlehem Steel Company	Johnstown, Pa.	77	570,000
West Boston Gas Company	Framingham, Mass.	15	47,523
Tennessee Coal, Iron & Railroad Co.	Fairfield, Ala.	63	657,000
Diamond Alkali Company	Painesville, Ohio	23	227,030
Carnegie Steel Company	Clairton, Pennsylvania	348	3,887,250
Bethlehem Steel Company	Buffalo, New York	57	520,125
Consumers Power Company	Flint, Michigan	29	135,500
Alabama By-Products Corporation	Birmingham, Ala.	49	500,000
Total ovens under construction		948	8,410,922
GRAND TOTAL		2,284	19,539,851

The Koppers Company

Pittsburgh, Penna.

Chicago, Ill. **New York City**

World Exports in 1913 and 1925 of 70 Leading Nations

(In Millions of Dollars)

	1913	1925	1925 Reduced to 1913 Values	Percentage of Increase or Decrease
North America:				
United States	2,484	4,910	3,273	+ 31
Canada	461	1,283	855	+ 85
Newfoundland	15	24	16	+ 6
	2,960	6,217	4,144	+ 40
Northern Latin America:				
British Honduras	3	5.7	3.8	+ 26
Costa Rica	10	16.5*	11	— 7
Cuba	165	348	232	+ 41
Dominican Republic	11	27	18	+ 69
Guatemala	14	30	20	+ 38
Haiti	11	19	12	+ 9
Honduras	3	12	8	+155
Mexico	130	340	226	+ 73
Nicaragua	7.7	13*	9.6	+ 15
Panama	5	8	5.3	+ 6
Salvador	9.4	24	16	+ 70
	369.1	843.2	561.7	+ 52
Southern Latin America:				
Argentina	501	793	528	+ 5
Brazil	318	490	326	+ 2
Chile	143	221	147	+ 2
Columbia	33	83	55	+ 66
Ecuador	16	25	16	...
Peru	44	88	58	+ 31
Uruguay	71	97	64	— 10
Venezuela	29	37	24.6	— 15
	1,155	1,834	1,218.6	+ 5
Total (Americas)	4,484.1	8,894.2	5,924.3	+ 30
Eastern Europe:				
Austria	812	266	177	— 78
Bulgaria	36	41	27	— 25
Czechoslovakia	..	558	372	...
Esthonia	..	26	17	...
Finland	78	140	93	+ 19
Greece	23	65**	43	+ 86
Hungary	386	142	94	— 75
Latvia	..	35	23	...
Lithuania	..	25	16	...
Poland	...	248	165	...
Rumania	129	130**	86	— 33
†Russia in Europe	731	261	174	— 76
Turkey	94	84*	56	— 40
Yugoslavia	23	152	101	+339
	2,312	2,173	1,444	— 37
Western Europe:				
Belgian Customs Union	701	689	453	— 35
Denmark	193	415	276	+ 43
France	1,328	2,165	1,443	+ 8
Germany	2,405	2,094	1,396	— 42
Irish Free State	...	214	142	...
Italy	485	727	484	— .002
Netherlands	822	726	484	— 41
Norway	105	187	124	+ 18
Portugal	38	31*	20.6	— 46
Spain	190	227	151	— 20
Sweden	219	365	243	+ 10
Switzerland	265	392	261	— 1
United Kingdom	3,089	4,479	2,986	— 3
	9,840	12,711	8,463.6	— 14
Totals (Europe)	12,152	14,884	9,907.6	— 18
Asia:				
Aden	18	22	14	— 22
British India	797	1,476	984	+ 24
British Malaya	200	719	478	+140
Ceylon	76	190	126	+ 65
China	306	625*	416	+ 36
Chosen	15	10	6.6	— 56
French Indo China	55	117	78	+ 41
Japan	315	946	630	+100
Persia	34	96	64	+ 88
Philippines	48	149	99	+106
Siam	30	69	46	+ 53
Taiwan	6	20	13	+116
	1,900	4,439	2,954.6	+ 52
Australasia:				
Australia	361	752	500	+ 38
New Zealand	104	264	176	+ 69
	465	1,016	676	+ 45
Africa:				
Algeria	97	115	76	— 21
Egypt	159	299	199	+ 25
Kenya and Uganda	9	38	25	+177
Morocco, French	8	40	26	+225
Sudan	6	20	13	+116
Union of South Africa	141	219	146	+ 3
Zanzibar	5	11	7	+ 4
	425	742	492	+ 16
Totals (A., A. and A.)	2,790	6,197	4,122.6	+ 47
Grand Totals	19,426.1	29,975.2	19,954.5	+ 2.66
Less United States	16,942.1	25,065.2	16,681.5	— 1.5

*1924 **Estimated †Allowing for reduction in territory Russia's loss of export trade since 1913 is about 50 percent.

Reduction to 1913 values is based on world quotient estimated by Economic Section of the League of Nations at 1.49.

World's Foreign Trade Now Is at Par For First Time Since War

AN "ARMISTICE Day Accounting" of the foreign trade of 70 nations, made by the National Foreign Trade council, estimates that the world has fallen short by more than $210,000,000,000 of the total of the merchandise exports it would have added to international trade if it had not been for the economic dislocation that accompanied and has followed the Great War.

Complete figures for 1925 for the nations who do more than 90 per cent of the world's export trade shows that now for the first time since the war international exports are at par again. These 70 nations had an export trade in 1913 valued at $19,426,000,000. Last year the corresponding figure stood at $19,950,000,000, after reducing the $29,970,000,000 worth of trade actually reported to the 1913 buying power of the dollar. Since 1913 it has thus taken 12 years to bring a 2½ per cent actual increase in the value of exports circulating in the world.

What world trade would have been had there been no war may be judged by the rate of advance in export trade that had steadily progressed from 1900 to 1913. The annual growth was six and one-half per cent. Had this growth continued the world would have been doing $41,500,000,000 of export trade at 1913 values instead of $19,950,000,000, the actual figures. At 1925 dollar values it would have done $62,100,000,000 instead of less than $30,000,000,000, the actual figures.

Foreign trade has thus not filled the gap by half between the normal extent to which it would have satisfied the growing demand of human

wants, had there been no war, and the extent to which it actually has met them. The accumulated shortages of these twelve years amount to the staggering total of $210,000,000,000 at 1925 gold values, ten times our national debt, or $140,000,000,000 at 1913 values.

World trade has now accelerated its pace to fill this gap. Instead of a 6½ per cent increase, world exports have been gaining more than ten per cent annually for the past three years. But the world will have to increase its exports at this rate yearly for more than thirty years to make up for the ground lost during the war. Even the United States, which gained almost 32 per cent in real exports since 1913 and has made the greatest gain of all nations in volume of trade acquired, is still more than $2,000,000,000 behind the export trade it would have had if the pre-war gain had been uninterrupted.

The moral of these facts is that American foreign traders still have an immense service to the world ahead of them in helping to make up the shortage of necessary goods which the artificial war-deflation of world needs has caused. We are still at least ten years short of catching up with our own normal foreign trading toward that end and the rest of the world is a full generation in arrears.

Table Reveals Changes

The table showing how 70 nations of the world distributed these gains and losses reveals a striking shake-up in 1913 alignments of trade power. Europe now holds but 49 per cent of the world's export trade beside the 62 per cent she did then. Her shortage is more than 18 per cent from her 1913 actual exports. This loss is weighted by a 37½ per cent deficit among the 14 nations of eastern Europe, but is gravely affected by the 14 per cent deficit still shown among the 13 much more important trading nations of western Europe.

As Europe has shrunk as an export continent, English speaking North America has risen by 40 per cent, Latin North America and the West Indies by 52 per cent, and South America by 5 per cent. Asia's increase is greatest of all, 52½ per cent, Australasia has expanded its exports by 45½ per cent and Africa by 16 per cent.

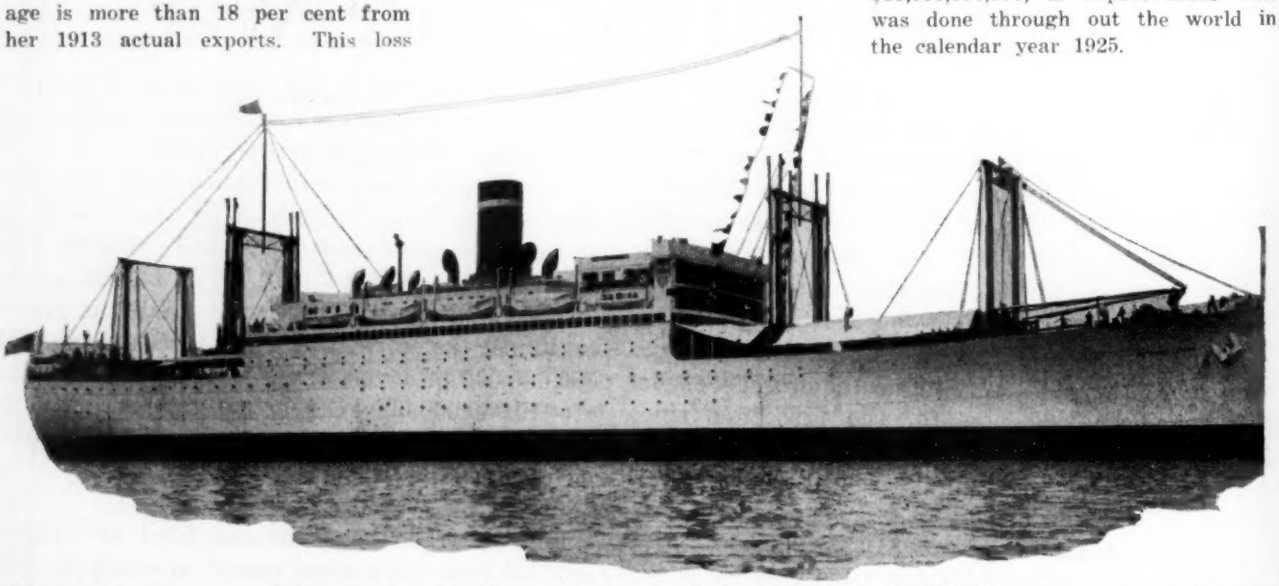
The largest total gain of any country was made by the United States with $789,000,000, or a total of export trade 31¾ per cent greater than that of 1913. Other countries in the world which have made remarkable gains are Yugoslavia with an increase of $78,000,000 or 339 per cent, British Malaya with an increase of $278,000,000 or 140 per cent, the Philippines with $51,000,000 increase or 106 per cent, Japan with $315,000,000 or almost exactly 100 per cent, Canada with $394,000,000 or 85 per cent, Australasia and New Zealand with $211,000,000 or 45½ per cent, India with $187,000,000 or 24 per cent. Other countries which have more than doubled the value of their real export trade since 1913 include French Morocco, Honduras, the Sudan, Formosa (Taiwan), Australia and the British Crown Colonies and Protectorates of Kenya and Uganda.

Outstanding among the countries whose losses have been severe is Russia, whose export trade is $557,000,000 behind that of 1913 or a 76 per cent loss. Weighting the values of Russian trade with the loss of some of its most valuable industrial territory, Russia's actual loss is still shown to be about 50 per cent. Although Germany is rapidly recovering its export trade, its 1925 figures show the next most important loss, one of 42 per cent from 1913 exports, with a consequent deficit of $1,009,000,000. Other heavy losses are those of Belgium with 35 per cent, the Netherlands with 41 per cent, Spain with 20 per cent, Portugal with 46 per cent, Turkey with 40 per cent, Russia with 33 per cent and Bulgaria with 25 per cent.

New Nations Alter Map

It is also evident that the economic map of Europe has been considerably altered by the appearance of new and vigorous industrial nations, notably Poland, Yugoslavia and Czechoslovakia. Poland's export trade is now almost as great as that of the whole of Russia, Czechslovakia's is twice as large as that of modern Austria, and Yugoslavia's overshadows that of Hungary. The four Baltic countries of Finland, Esthonia, Lithuania and Latvia did a combined export trade during 1925 of $149,000,000 greater than the trade of any country in South America outside of Argentina and Brazil.

The table on page 1229 of the fall and rise of world exports among the 70 most important trading nations is based on official 1925 figures. Exports are taken because they represent the vitality of foreign trade and because to add import figures would only duplicate the same transaction. These figures cover close to $30,000,000,000 of the estimated total of $33,000,000,000, in export trade that was done through out the world in the calendar year 1925.



American Legion, a vessel brought into the North America-South America service by the increasing commerce between the continents in machinery, agricultural implements and automobiles

Industrial Furnaces

A Treatise on the Design, Construction and Function of Modern Melting, Heating and Treating Units

By Charles Longenecker

Chapter III—Intermediate or Heating Furnaces

AFTER Siemens succeeded in making open-hearth furnace operation a reality he was confronted by other difficulties. The metal was poured from the furnace and cast in the form of ingots, which were allowed to cool, and then reheated and rolled. This procedure sacrificed the initial heat in the metal, as it came from the furnace. A more economical procedure would be to roll the ingots before they had become cool, but it was found that the upper central portion of each ingot remained in a liquid state for some appreciable time after pouring, and hence before rolling it was necessary that this liquid center should solidify. If allowed to stand in the open the initial heat in the metal would be dissipated and this heat had to be restored to maintain the required rolling temperature.

To overcome this difficulty Gjers conceived the idea of placing each ingot in a pit where it could remain until the temperature throughout the mass was in equilibrium, or nearly so. The heat from the center passed to the cooler outer surfaces and in time the center was solid enough to permit the ingot to be rolled. Gjer's pits had no other source of heat than that contained in the ingot as it was received, hence, if for any reason the steel was allowed to become cold it had to be heated in a furnace of a different type. In Gjer's pits the ingots merely soaked and if the temperature of the metal, when received, was too low, the pits were valueless. The term, soaking pits, originated from this practice and, while, the modern furnace still is known as a soaking pit the appelation is too restricted. Pits of present day design are shown in Figs. 23 and 24.

In order to utilize to the fullest extent the heat which the metal contains as it comes from the furnace, the ingots are stripped of their molds and rushed to the pits as soon as practical. Ingots of alloy steel, however, frequently are allowed to cool and then are reheated. When first poured, the temperature of the liquid portion of the ingot will approximate 3050 degrees Fahr; when ready to roll, the metal should have a uniform temperature ranging from 2200 to 2300 degrees Fahr. The rolling temperatures are fairly constant for such grades as, spring steel, alloy steel and low-carbon steel.

Construction Details Vary

Soaking pit design is well standardized as to the general layout but details of construction vary in accordance with the size and number of ingots to be charged and the fuel to be burned. In many respects the design is similiar to that of the crucible steel melting furnace but the proportions are larger. The principle is the same. As the ingots usually are hot when received the fuel expenditure is low and, consequently, the regenerators need not be large in comparision to those of other furnaces.

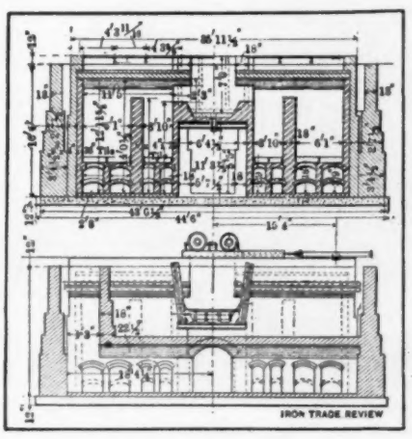


FIG. 21—SOAKING PIT FURNACE PROVIDED WITH RECUPERATORS FOR AIR AND GAS

The regulation of the air and gas must be flexible because the surface of the metal will be cut if the flame is too oxidizing.

When heating bessemer steel ingots received direct from the converter, the consumption of producer gas will range from 35 to 65 pounds of coal per ton of ingots heated while for open-hearth steel a fuel consumption of 75 to 150 pounds of coal is average practice on hot ingots. It is apparent when considering fuel consumptions on heats of hot steel of like composition, that the temperature of the ingots, as received at the pits, is the governing factor. Thus ingots from the bessemer converter are poured at regular intervals and reach the pits comparatively hot. Hence, the quantity of fuel required is small. Other contributing factors are the grade of steel and the time it must be held in the pits. The efficiency of soaking pits will average 7 to 8 per cent when heating hot steel.

The pile heating furnace probably was the first furnace constructed solely for the purpose of heating material to be hammered or rolled. Previous to its employment masses of iron, which had to be reheated, were placed in the same furnace as that in which they were produced from the ore. Thus these early furnaces of the catalan-forge type served a dual purpose. The metal first was extracted from the ore, and the resulting lump then reheated for hammering. The first pile-heating, reverberatory furnace was contemporary with Cort's puddling furnace and its introduction was the outgrowth of the desire for a furnace that adequately would heat the product of the puddle furnace.

As a rule industrial furnaces are named or designated from some outstanding feature peculiar to the particular type. Thus the blast furnace was so called from the manner of introducing the blast; the open-

hearth furnace derived its name from the form of the hearth; the annealing furnace was named from the process while the pile-heating furnace was so termed from the fact that in it piles were heated. Another name for this last mentioned unit is a fagot furnace. The term fagot and pile frequently are used synonomously.

Construction Differs

The piles to be charged into the furnace are made in several forms. The box pile has its four sides formed of muck bar with the interior filled with crop ends or small pieces of various shapes. Solid piles are composed entirely of muck bars, laid one on another, or, of lengths of varying widths, so laid that the bars are parallel to the sides. For plates the bars in alternate layers, are crossed; the top and bottom of the piles frequently are formed of a bottom 1 to 1½ inches thick.

Before steel had supplanted iron in the manufacture of rails and structural shapes, the piles, from which these products were to be rolled, were formed to correspond to the sectional contour of the finished rail or shape. Axles were rolled from round piles securely bound with wire. As a rule the weight of the various piles heated will range from 60 to 1000 pounds.

Quality of output is dependent, not only on the material of which the pile is formed, but also on the manner in which it is constructed and the amount of rolling to which it is subjected. With a high-quality iron in well-built piles, it is necessary to roll so that the excess slag is forced out and that remaining is evenly distributed and broken up. Wrought iron of the best grades is rolled several times. The finished product contains less than 4 per cent, by weight, of slag. Pockets of slag are weakening but in the form of fine filaments the slag resists the corrosive effect of the various elements.

Two types of furnaces are encountered in general practice namely, the reverberatory and the regenerative. The design of the first type is easily traced because its lines conform closely to those of the puddling furnace. It is only natural that the early ironmasters in designing a furnace which must carry a temperature approximating that of the furnace they already had perfected, should cleave to the lines of the puddling furnace. Thus the reverberatory pile-heating furnace is a modification of that used for puddling. The dimensions were increased and the hearth altered for the service it must perform but the same principle obtains. A comparison of the furnace, as shown in Fig. 25, with a typical puddling furnace shown in Fig. 15 reveals the similarity.

Unit Is Efficient

Fig. 25 shows a modern regenerative-type furnace fired with producer gas. Where the operation is continous furnaces of this type are justifiable. Besides the saving in fuel, over hand-fired practice, heating conditions are ideal. The flame is soft and subject to close regulation both as to temperature and composition. Metal losses will average about 8 per cent in furnace of this type but it is possible to keep this loss at or near 5 per cent. At this latter figure it is difficult to obtain satisfactory heating because the iron usually is not soft enough for good rolling. When burning producer gas the coal consumption will vary from 700 to 1000 pounds, per ton of iron, depending on the size of pile heated. Burning natural gas a consumption as low as 5000 cubic feet can be obtained but at this figure the heating is too slow for the desired production.

When fired by hand the reverbera-

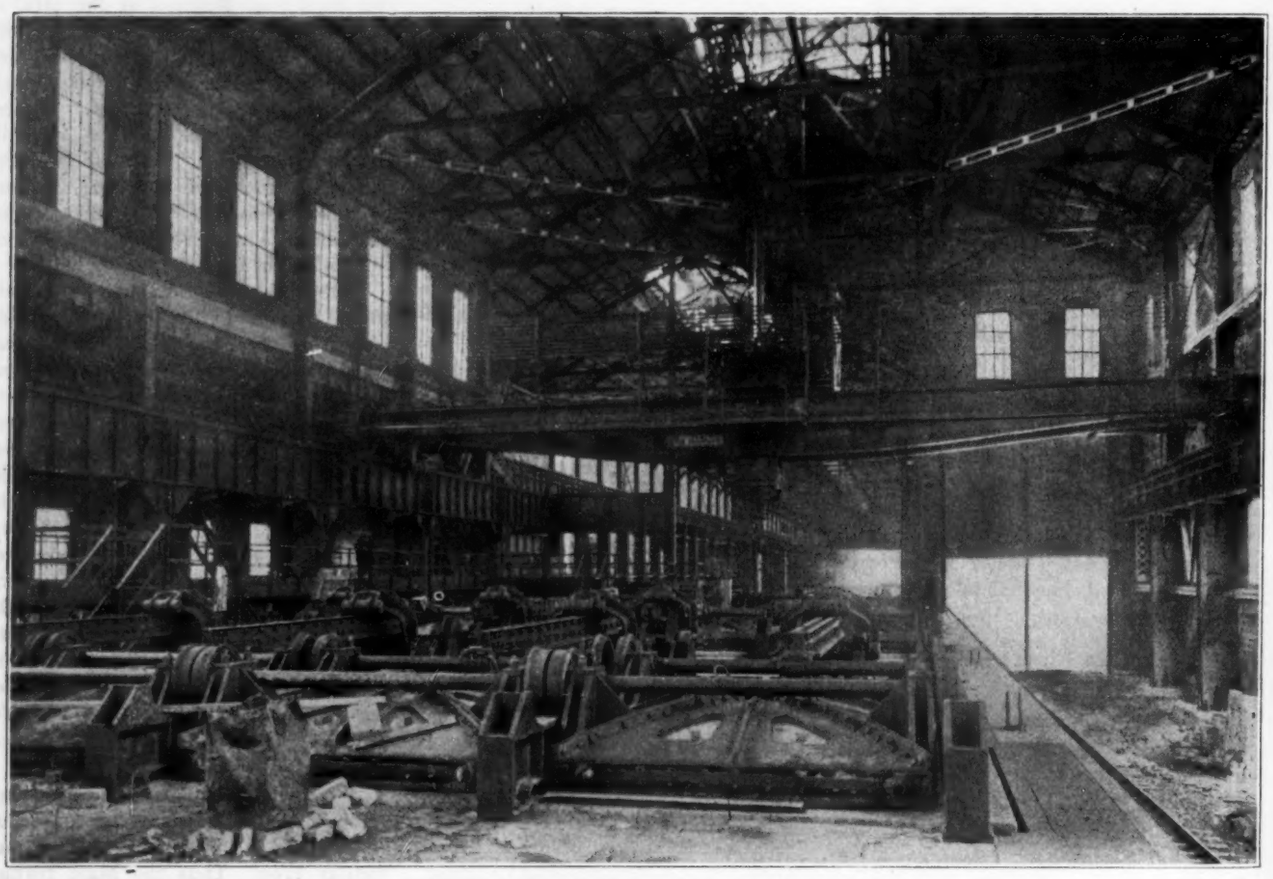
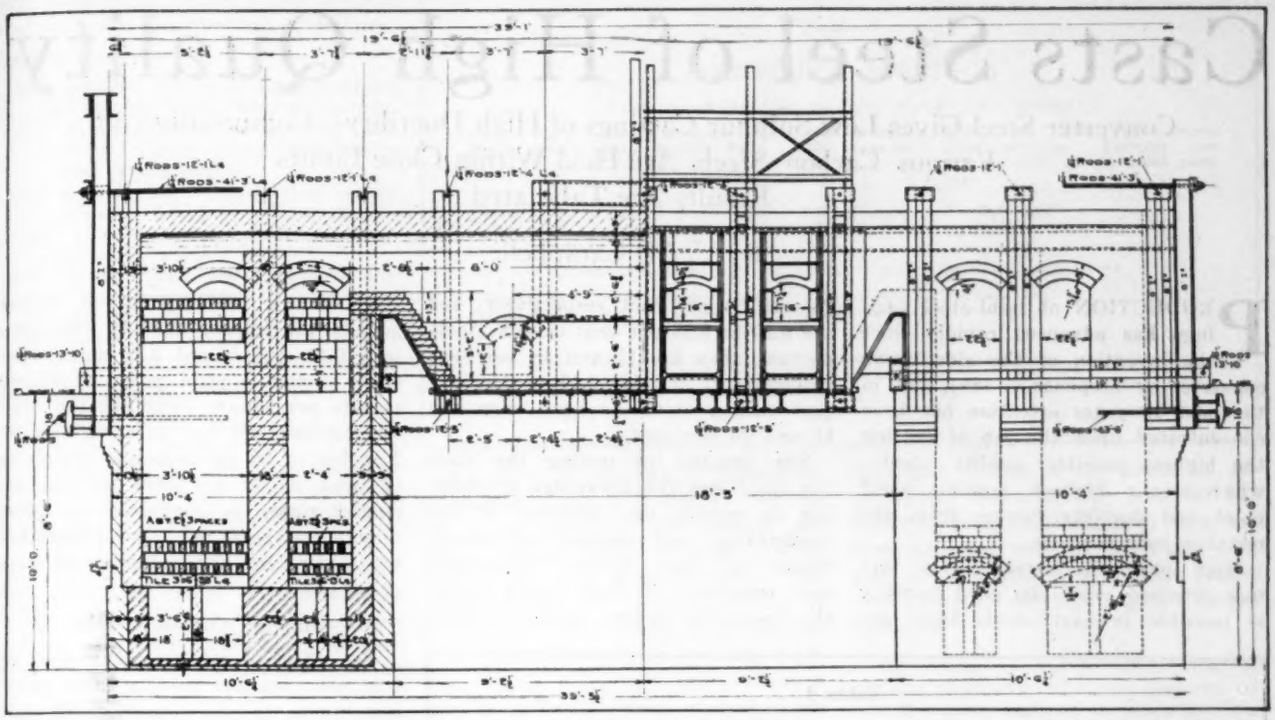


FIG. 24—SOAKING PIT DEPARTMENT OF A STEELWORKS. AFTER THE COVERS ARE ROLLED TO ONE SIDE THE INGOTS ARE CHARGED INTO THE PIT AND ALLOWED TO REMAIN UNTIL THE TEMPERATURE THROUGHOUT THE MASS IS IN EQUILIBRIUM



Courtesy A. M. Byers Co.

FIG. 25—A MODERN PILE HEATING FURNACE OF THE REGENERATIVE TYPE FIRED WITH PRODUCER GAS AND USED TO HEAT MATERIAL TO BE HAMMERED OR ROLLED

tory furnace will consume from 750 to 1100 pounds of coal per ton of output. In stating fuel consumptions approximations only can be given as the size, and make up of the pile, type of furnace, and personal factor all have a bearing on the amount of fuel burned. Many plants fire their furnaces with powdered coal with considerable economy in the fuel ratio. Where five heats are drawn per turn, from 560 to 750 pounds of coal per ton of iron will be burned. An average of 600 pounds is satisfactory practice.

Designs Are Modified

Many modifications in furnace design have been tried with increased furnace efficiency as the object. In the Stubblebein type furnace, the air for combustion is admitted to passageways in the firebox walls. This air flows through the passageways, is heated and then directed into the flame as it passes over the bridge wall. The aim is to secure more perfect combustion. Another modification to the standard type of furnace is the Lauth-type roof. This roof is high and has a steep pitch near the outlet to the stack. Such a construction would tend to give increased reverberatory effect and possibly increase radiation to some extent. What real value is derived from the various modifications which have been introduced is open to question but in some cases there does appear to be an improvement in the rapidity of heating and efficiency of combustion.

It is common practice to pass the products of combustion leaving the furnace, through a waste-heat boiler thereby generating steam to about the normal capacity of the boiler. Rarely is the normal capacity exceeded. Such waste-heat boilers generally range from 200 to 250 horsepower while the waste gases, as they enter the boiler average 250 degrees, Fahr. If credit is given the furnace for the steam generated in the waste-heat boiler, on the same basis as if generated in direct-fired boiler, the fuel cost per ton of output will be reduced at least 50 to 75 per cent. Intermittent operation largely counterbalances the increased efficiency derived by the installation of waste-heat boilers.

The importance of careful heating cannot be overemphasized in this class of manufacture. All heating, in whatever type of furnace, should be done with care but the quality of wrought iron is more dependent on correct heating than is the case in other branches of the iron or steel industry. Not only must the various pieces be welded thoroughly but the slag must be fluid enough to permeate the interstices and flow freely when the pile is rolled. To secure such conditions a furnace temperature of approximately 2700 degrees Fahr. is required and heating period of sufficient duration to allow the heat to penetrate the center of the pile. The length of this period varies according to the size and form of the pile. Uusually 45 minutes to an hour is necessary but with large piles a longer period may be required.

Proposes Key Standards

Subcommittee No. 5 on the standardization of Woodruff keys of the sectional committee on the standardization of shafting has just completed the first table of its proposed report which covers the dimensions of the keys themselves. The subcommittee now is at work on the dimensions of the corresponding keyseats and keyways and it is expected that these tables will be completed within the next few weeks. In the meantime, criticism is desired from manufacturers and users on the dimensions of the keys.

It will be recalled that the sectional committee on the standardization of shafting was organized in October, 1918 under the procedure of the American Engineering Standards committee with the American Society of Mechanical Engineers as sponsor. This sectional committee so far has developed standards for cold-finished shafting, diameters and lengths; square and flat stock keys, widths and heights; code for design of transmission shafting; and plain tape and gib head stock keys, square and flat.

The first iron pot made in New England states was cast about 1644.

Casts Steel of High Quality

Converter Steel Gives Low-Sulphur Castings of High Ductility—Compositions of Various Carbon Steels Are Held Within Close Limits —Results Are Tabulated

By C. M. Campbell

PRODUCTION of light-steel castings has advanced rapidly since the invention of the side blown converter by Tropenas in 1891, and, in the past 12 years attention has been concentrated upon the job of getting the highest possible quality steel—which means highest possible yield point and ductility figures from the metal in such castings.

High physical characteristics are now obtained, especially good ductility is possible in cast steels that are dense, low in sulphides, oxides and other solid nonmetallic impurities. That such results are possible is shown by the data of Tables II, III and IV, which give average physical properties and compositions of converter steel made in the plant with which the writer is connected. Not only are the individual heat compositions held within close limits, as shown in the tables, but carbon, manganese, silicon and sulphur in any one heat are held very uniform throughout the whole heat. That this is so is seen by a study of Table I.

Table I

Uniformity of Composition in Heats

Heat No.	Date	Time	Per Cent Carbon	Per Cent Manganese	Per Cent Silicon	Per Cent Sulphur
2	6/29/26	After first shut off.....	0.25	0.58	0.29	0.046
2	6/29/26	Last 1/3 of ladle.....	0.24	0.56	0.30	0.040
4	6/29/26	After first shut off.....	0.25	0.58	0.29	0.040
4	6/29/26	Last 1/3 of ladle.....	0.26	0.56	0.30	0.042
8	6/29/26	After first shut off.....	0.21	0.65	0.34	0.040
8	6/29/26	Last 1/3 of ladle.....	0.22	0.66	0.35	0.042

Time for charging steel from converter into ladle to opening up in foundry was for heat No. 2—5 minutes; heat No. 4—7 minutes; heat No. 8—5 minutes.

Temperature of these heats at time of opening up as determined by an optical pyrometer were for heat No. 2 2905 degrees Fahr.; heat No. 4—2910 degrees Fahr.; heat No. 8—2900 degrees Fahr.

Control of Sulphides

Since sulphides and other solid nonmetallic impurities adversely affect the ductility of cast steel, it would seem, according to the physical properties shown in the tables, that such impurities are not present in harmful amounts in converter steel.

The lowest figures for elongation and reduction of area in the 0.15 to 0.20 per cent carbon steels as cast are 25 and 50 per cent respectively; for the 0.20 to 0.28 per cent carbon steels as cast, they are 15 and 18 per cent respectively; and for 0.40 to 0.50 per cent carbon steels as cast, they are 11 and 15 per cent.

The practice of testing the steel "as cast," has the advantage of showing up readily the character of the steelmaking and casting operations. Steels "as cast," having elongation and reduction of area much below the minimum figures shown above, may contain too many impurities or be cast too hot, and it would be difficult to secure the desired physical properties in the annealed condition.

Manganese Increases Ductility

The effect of increasing manganese within certain limits in steel of a given carbon content, is to increase its yield point and ductility. It is sometimes desirable to secure a higher yield point and ductility in certain castings, and this can be done by increasing the manganese instead of the carbon, as shown by comparison of Sections C and D of Table II.

A 0.28 carbon and 1.14 manganese steel has a yield point of 57,200 pounds per square inch as compared to a 0.47 carbon and 0.73 manganese steel having a yield point of 57,000 pounds per square inch; but the high manganese steel has an elongation in 2 inches of 25 per cent and reduction of area of 40 per cent in the annealed state, as compared to lower manganese steel with an elongation of 18 per cent and reduction of area of 30 per cent.

Sulphur Causes Cracks

The effect of sulphur in amounts of 0.07 per cent and greater is to cause hot cracks in steel castings of thin sections and complicated shapes. Sulphur under 0.07 per cent does not have this effect upon steel castings, neither does it affect the physical properties. Between 0.07 per cent and 0.05 per cent sulphur, the effect upon the machinability of steel castings seems to be to increase its free cutting properties. Sulphur, in these small amounts, probably occurs entirely as manganese—sulphide in globular form in the steel, and is thereby rendered harmless to the metal.

In the converter process, sulphur is reduced by treating the iron in the ladle with fused soda ash. By adding an amount equal to 0.5 per cent of the weight of iron in the ladle, sulphur is reduced to between 0.07 and 0.05 per cent. An amount equal to 1 per cent of the weight of iron in ladle reduces sulphur to between 0.05 per cent and 0.035 per cent, and sometimes as low as 0.025 per cent.

The larger part of our output of castings is made to specifications which limit us to 0.05 per cent sulphur as a maximum, and we have been doing this regularly since the

Table II

Physical Properties of Converter Cast Steel

Carbon Per Cent	Condition	Tensile strength, pounds per square inch	Yield point, pounds per square inch	Per cent elongation in 2 inches	Per cent reduction in area
(A)—0.15 to 0.20	as cast	60,000	33,700	30.0	50.0
	annealed	60,000	34,600	37.5	54.0
(B)—0.20 to 0.28	as cast	72,000	41,000	18.0	25.0
	annealed	72,000	42,000	30.0	46.0
(C)—0.40 to 0.50	as cast	95,000	54,450	12.5	18.0
	annealed	95,300	57,000	18.0	30.0
(D)—0.25 to 0.30, with High Manganese	as cast	85,400	56,900	20.0	28.0
	annealed	87,000	57,200	25.0	40.0

From a paper presented at the annual convention of the American Foundrymen's association, Detroit, Sept. 27 to Oct. 1, 1926. The author, C. M. Campbell, is metallurgist, West Steel Castings Co., Cleveland.

last quarter of 1923. Data on general converter practice are as follows:

Cupola charges:

400 pounds low-sulphur, low-phosphorous pig iron—first 8 charges.
400 pounds steel scrap and 400 pounds foundry scrap alternately—first 8 charges.
320 pounds high-silicon steel scrap—(Silicon 2.00 to 4.00 per cent).
240 pounds steel scrap—forging tong holds, plates, etc.
240 pounds foundry scrap—heads and gates—our own.
150 pounds coke.
45 pounds limestone—97 per cent to 98 per cent calcium carbonate.

Converter operation:

Converter will blow 4000—4500 pounds hot metal.
Blowing time—16 minutes—average.
Blowing loss 14 per cent—average.
Cupola melting loss 5 per cent—average.

For 0.15 to 0.20 per cent carbon steel the blown metal is recarburized by adding 80 per cent ferromanganese and 50 per cent ferrosilicon to the steel in the ladle. For 0.20 to 0.28 per cent carbon steel, we add silico-spiegel to the metal in the converter either melted or cold, and balance of manganese and silicon is added to the steel in the ladle. For 0.40 to 0.50 per cent carbon steel we add melted silico-spiegel to the metal in the converter, and the balance of manganese and silicon is added to the steel in the ladle.

Bottom pouring steel ladles are used for casting purposes in the foundry, the heavy dry sand castings being poured from this ladle and medium weight and light green sand castings being poured by means of shank ladles.

Table V

Annealing Methods

Annealing Method No. 1—Light Weight Thin Section			
0.15 to 0.28 carbon steel	Heat 2 hours to 1650 degrees Fahr.	Hold 1 hour 1650 degrees Fahr.	Air cool 0.15 to carbon steel castings. Furnace cool 0.20 to 0.28 carbon steel castings
0.40 to 0.50 carbon steel	Heat 2 hours 1600 degrees Fahr.	Hold 1 hour 1650 degrees Fahr.	Furnace cool
Annealing Method No. 2—Heavy Section (One Inch and Over)			
0.15 to 0.28 carbon steel	Heat slowly (about 400 degrees) to 1650 degrees Fahr.	Hold at 1650 degrees Fahr. 1 to 3 hours	Furnace cool.
0.40 to 0.50 carbon steel	Heat slowly (about 400 degrees Fahr. per hour) to 1600 degrees Fahr.	Hold at 1600 degrees Fahr. for 1 to 3 hours	Furnace cool

We have two annealing procedures. These are given in Table V. Method No. 1 is used for light weight and thin section steel castings, while method No. 2 is used for heavy section castings (1 inch and over in thickness). We ordinarily do not use other methods of heat-treating castings except in certain cases where a method of heat-treating is worked out for these special cases.

Advertising

Creating and Sustaining Prosperity, Says Coolidge

Advertising is largely responsible for the elevation of American standards of living, high production, high wages and general prosperity, President Coolidge declared to the American Association of Advertising Agencies at a recent session in Washton. The President paid a remarkable tribute to the power of advertising, pointing out how it has stimulated demand, which in turn has been satisfied only by increased output, made available to all the American people through their larger earnings.

"It seems to me probable that of all our economic life the element on which we are inclined to place too low an estimate is advertising," he said.

"You have seen innumerable instances where concerns have failed through lack of advertising and innumerable others where they have made a success through the right kind and amount of publicity. Under its stimulation the country has gone from the old hand methods of production, which were so slow and laborious with high unit costs and low wages, to our present great factory system and its mass production with the astonishing result of low unit cost and high wages. The pre-eminence of America in industry which has constantly brought about a reduction of costs has come up very largely through mass production. Mass production is only possible where there is mass demand. Mass demand has been created almost entirely through the development of advertising.

"In former days goods were expected to sell themselves. Oftentimes they were carried about from door to door. Otherwise, they would have lain on the shelves and counters of the merchants. The public was supposed to know of these sources of supply, and to depend on itself for its knowledge of what was to be sold. Modern business could neither have been created nor can be maintained on any such system. It constantly requires publicity. It is not enough that goods are made, a demand for them must also be made. It is on this foundation of enlarging production through the demand created by advertising that very much of the success of the American industrial system rests.

"It is to be seen that advertising is not on economic waste, but ministers to the true development of trade. It is no doubt possible to waste money through wrong methods in any department of industry. But rightfully applied it is the method by which the desire is created for better

Table III

Composition of Converter Cast Steel

(Phosphorus under 0.04 per cent)

		Carbon Per cent	Manganese Per cent	Silicon Per cent	Sulphur Per cent
(A)—Composition, 7 heats; March, 1926; Carbon range 0.15 to 0.20.	Average	0.16	0.73	0.33	0.052
	Maximum	0.17	0.80	0.40	0.053
	Minimum	0.15	0.66	0.30	0.049
(B)—14 consecutive heats; April, 1926; Carbon range 0.20 to 0.28.	Average	0.25	0.73	0.39	0.047
	Maximum	0.28	0.79	0.41	0.053
	Minimum	0.22	0.67	0.32	0.041
(C)—19 consecutive heats; March, 1926; Carbon range 0.40 to 0.50.	Average	0.47	0.73	0.36	0.048
	Maximum	0.50	0.78	0.40	0.050
	Minimum	0.42	0.70	0.32	0.042
(D)—1 heat. High Manganese Cast Steel; Carbon range 0.25 to 0.30.	.....	0.28	1.14	0.38	0.041

Table IV

Composition of Special Cast Steels

9 *Heats—November*, 1925

	Per cent Carbon	Per cent Manganese	Per cent Silicon	Per cent Sulphur	Per cent Phosphorus	Per cent Vanadium
Average	0.56	1.62	0.53	0.038	0.04 or under	0.18
Maximum	0.59	1.77	0.55	0.025	0.04 or under	0.15
Minimum	0.54	1.57	0.46	0.046	0.04 or under	0.27

things. When that once exists new ambition is developed for the creation and use of wealth. The uncivilized make little progress because they have few desires. The inhabitants of our country are stimulated to new wants in all directions. In order to satisfy their constantly increasing desires they necessarily expand their productive powers. They create more wealth because it is only by that method that they can satisfy their wants. It is this constantly enlaging circle that presents the increasing progress of civilization."

Coke-oven gas distributed through city mains in the United States in 1924 exceeded 65 billion cubic feet.

September Production Index Falls

September production index for iron and steel is given as 133, compared with 135 for August and 118 for September of last year, taking 1919 as 100 per cent, according to the department of commerce, Washington.

September index for "other metals" is given as 180 compared with 175 for August and 183 for September, 1925.

Taking 1920 as 100 per cent, iron and steel unfilled orders for September were 38 compared with 36 for August and 38 for September, 1925.

Electroytic iron is employed as a basis for experimental work on the various properties of iron where the purest available metal is required to obtain accurate data. It also is used as a basis for alloys requiring pure iron.

Welds High-Chromium Iron Alloys

By Stanley M. Norwood

ONE of the most important problems in the chemical industry is the design of equipment capable of withstanding the extreme conditions frequently encountered. In recent years marked advances have been made in the development of alloys resistant to pressure, temperature and corrosion, because it has been found that improved efficiencies in many processes can be attained only through higher pressures and temperatures, the latter often exceeding red heat. Among such alloys, those containing 10 per cent or more of chromium have become particularly prominent. Of the numerous mechanical problems to be solved in the practical application of these alloys, welding must be considered as among the most pressing. Since the general properties of these chromium alloys have been discussed elsewhere, they will not be considered in this paper except in their relation to welding.

Noteworthy improvements have been made in the welding of these alloys, but new compositions and new uses will give rise to new problems in this field. It has been found possible to weld these materials with entire satisfaction for certain uses, but this operation has not been quite so successful in applications where exceptionally high strength and ductility are desired, as in the welding of pressure vessels and apparatus which must withstand severe vibratory stresses. Gas welding most commonly has been employed, and usually with a reducing flame, that is, with an excess of acetylene. Such a flame makes welding much easier for these particular alloys, but it has the disadvantage of introducing carbon into the weld, resulting in hardness, lack of ductility, and machining difficulties. Electric welding also is being applied successfully to these alloys.

The welding of high-chromium alloys gives rise to infusible oxides, which are difficult to float to the surface of the weld; unless removed, they constitute points of weakness. Recently, fluxes have been developed which operate satisfactorily in slagging off these oxides and protecting the metal from excessive oxidation during welding. These fluxes permit the use of a neutral flame in gas welding, while they improve electric welding by yielding a clean, dense deposit.

Other Difficulties Arise

In those alloys consisting chiefly of chromium and iron, certain other difficulties become apparent after a weld is completed, notably a lack of ductility in the weld metal and in that portion of the plate metal adjacent to the weld. In alloys containing approximately 20 per cent of chromium, this brittleness can be remedied to some extent by heat treatment, but the method may not always be applicable, because of the size or other features of the construction. Moreover, heat treatment is not effective in relieving weld brittleness in alloys containing more than 20 per cent of chromium.

Long experimentation in this direction has led to the conclusion that the remedy is to be found not so much in a marked departure from the present method of welding as in an improvement in the composition of the alloy. The addition of about 8 per cent of nickel to high-chromium alloys has been found beneficial since it refines the grain and improves the ductility and shock resistance, at the same time preventing the development of brittleness after welding. It also improves slightly the welding qualities of the alloy. Nickel, however, has a tendency to diminish the resistance of the alloy to corrosion by certain media, such as sulfur, sulfur dioxide, and other gases containing sulfur.

This objection has been offset by increasing the silicon in the alloy to about 2 per cent. For example, under the action of moist sulfur dioxide at 1000 degrees Cent. for 48 hours, the loss of weight per unit area by a 25 per cent chrome iron, containing 10 per cent nickel and 2 per cent silicon, was almost precisely one-half the loss suffered by a plain chrome iron of similar chromium contents. Under the same conditions, a direct comparison of two 25 per cent chrome irons, each containing 10 per cent nickel, showed that the loss by the one containing 2 per cent silicon was again almost exactly one-half of that lost by the alloy carrying only 0.5 per cent silicon. The addition of nickel, when accompanied by silicon, is found to have no adverse effect on the resistance of the alloy to dilute nitric acid and to oxidation at high temperature; in fact, the effect appears to be slightly in the opposite direction.

It also has been found that if the percentage of manganese is made approximately equal to that of silicon, a flux-covered rod becomes unnecessary, since the products of oxidation are self-slagging. The foregoing-mentioned additions to the high-chromium alloys, especially to those containing more than 20 per cent of chromium, have been found to solve most of the difficulties which have been encountered in welding, while affording a composition easy to weld and having ductility in the welded article without heat treatment. Results have been obtained on welded coupons, ground flush, in which the elongation in 2 inches containing the weld has

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From a paper presented at the fiftieth annual meeting of the American Electrochemical Society, Washington, Oct. 7-9, 1926. The author, Stanley M. Norwood, is affiliated with the Union Carbide & Carbon Research Laboratories Inc., Long Laland City, N. Y.

been as high as 10 per cent, with a yield point of 50,000 pounds and an ultimate strength of 80,000 pounds per square inch.

The break almost always occurs in the weld, in contrast with the usual experience with plain chrome iron, which breaks usually in the adjacent plate metal embrittled by the welding treatment. Such results must be considered favorable, when compared with the negligible elongation observed in welds on compositions containing normal amounts of manganese or silicon, but little or no nickel. Under the bending test, welds in ¼-inch plates have been bent 100 to 110 degrees before the first cracking was observed. The plate metals used in the above-mentioned welding tests, all ranging below 0.20 per cent carbon, although carbon up to 0.5 per cent introduces no difficulty, show yield points of about 20,000, and ultimate strengths of 90,000 to 100,000 pounds per square inch, with elongations of 35 to 40 per cent in 2 inches. Machining of test specimens involves no complications.

Although some well informed metallurgists maintain that alloys with more than 20 per cent chromium are not inherently more resistant to corroding media than those containing less than 20 per cent, the opposite opinion is amply supported by numerous and comprehensive data that have come under the writer's personal observation. Under oxidizing conditions at 1000 degrees Cent., laboratory tests show a pronounced critical point at about 20 per cent chromium, while plant tests of longer duration show still more clearly the advantages of the higher percentages of chromium.

While the addition of nickel confers certain benefits, as previously explained, its presence hitherto has been undesirable in some applications, because of its adverse effect on corrosion resistance in certain important instances; in the presence of combined silicon and manganese, however, the nickel is protected and welding is facilitated.

Spare Controller Protects Workmen

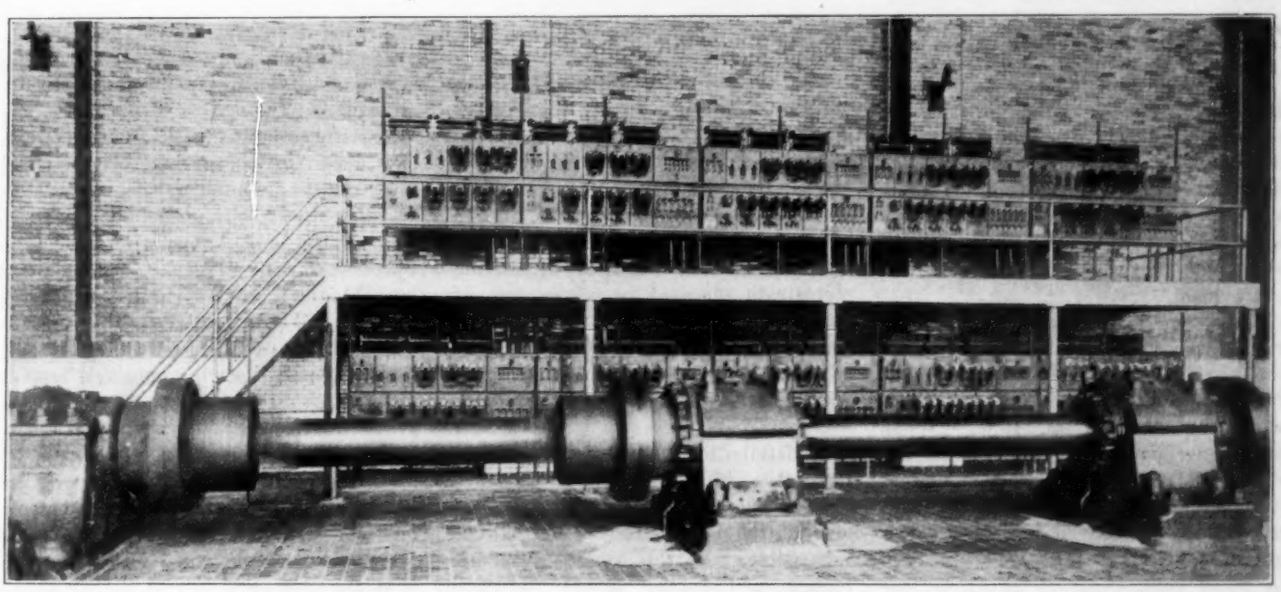
MOTORS for steel mill machinery are selected with large overhead capacities, engineering students recently were told by E. G. Peterson, sales engineer, Cutler-Hammer Mfg. Co., Milwaukee. Controllers also are selected with contactors of reliable design and conservative ratings. In addition, the control engineer has made it possible to provide insurance against delays by throwing a knife switch. One controller serves as a spare for a group of three or more equipments. At the first sign of difficulty on the regular controller, the transfer knife switch is thrown, connecting a spare and isolating the regular controller, which then can be repaired at leisure without danger to the workman.

The control panel shown in the accompanying illustration is one of a number used with motors driving sliding frame saws in a modern mill rolling I-beams, channels, and other shapes. The motors and controllers are rated 150-horsepower, 220 volts, three-phase, 60 cycles. The motors are of the slip ring type and the controllers are arranged to provide automatic current limit acceleration by three-phase series relays connected in the motor secondary. Relays also are provided for low voltage and overload protection.

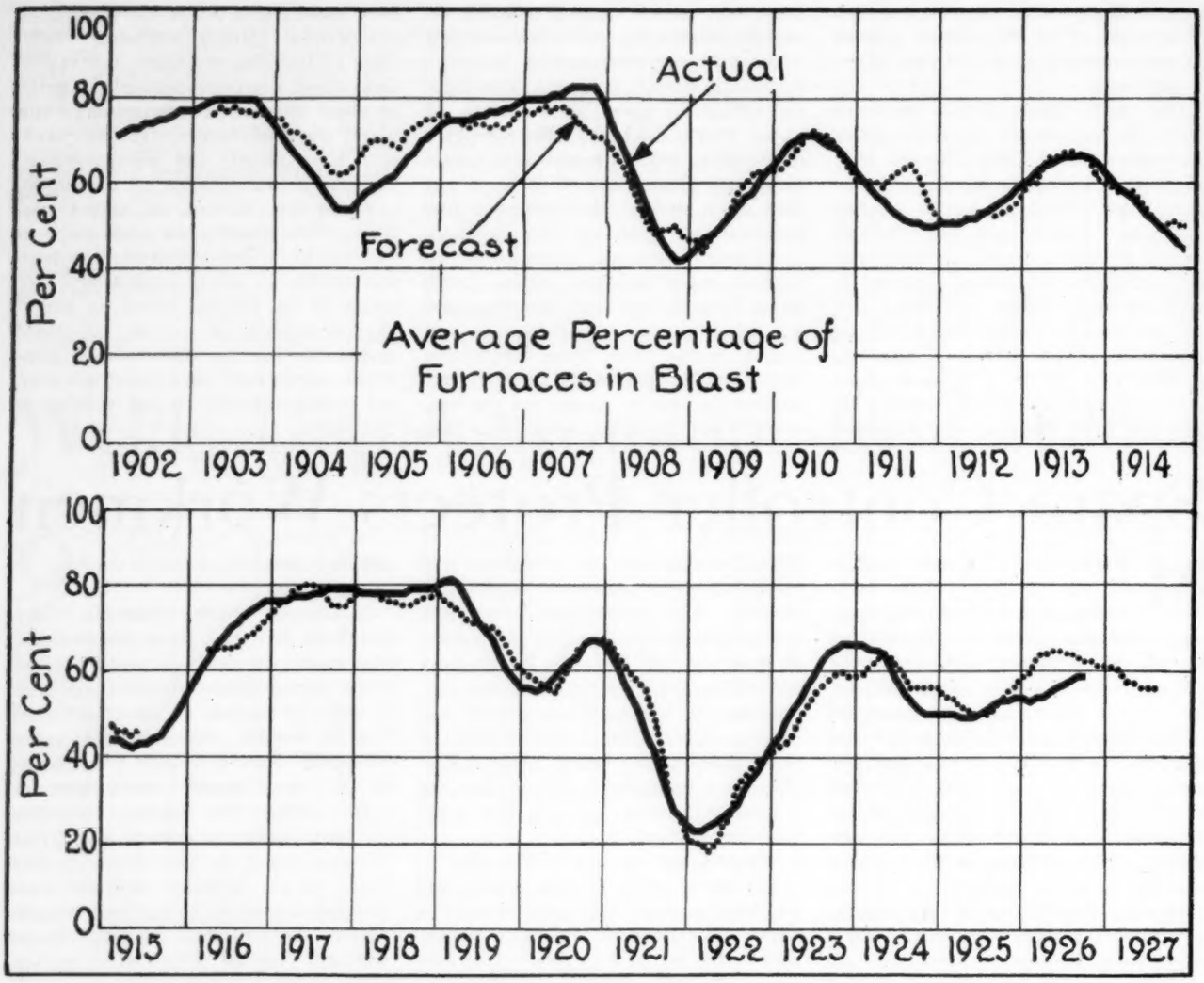
Mechanical Interlocks Provided

All three primary lines which lead to the motor are broken by a three-pole disconnecting knife switch and by the use of a two-pole main contactor and two double-pole reversing contactors with mechanical interlocks. The primary contactors are rated 500 amperes continuously and the secondary or accelerating contactors 200 amperes continuously, since the secondary current on these motors is only 160 amperes.

In addition to the contactors, relays and knife switches, there are two six-pole double throw knife switches. The large double throw transfer switches permit the motor to be transferred from its regular controller to the spare controller when necessary. By means of the small double throw transfer knife switch, the master controller for that particular control board also is transferred to the spare control board so the operator will not have to learn a new set of motions to manipulate the mill, but the same motor will still respond to the same master, but through a different controller. At the particular installation shown in the photograph, one spare control board serves for three sliding frame saws and two straighteners. The control boards are on a gallery.



CONTROL BOARDS, WHICH ARE SHOWN MOUNTED IN A GALLERY, SERVE THREE SLIDING FRAME SAWS AND TWO STRAIGHTENERS IN A MODERN STRUCTURAL MILL



Forecasts Sales By Furnace Index

By B. B. Smith

THE subject of the relationship between interest rates, prices and general business is not new. Interest rates and prices are matters intimately connected with the functioning of the business cycle and as such have received the attention of many students in economics. One of the most basic things affecting business prosperity is the movement of the price level.

Thus, when commodity prices are rising, the more holding of goods on the part of enterprises is profitable, for the value of the goods enhances with the passage of time. When prices are once started on the upswing the movement tends to augment itself; for business enterprises hasten to make purchases before the prices go higher and at the same time fail to make commensurate effort to dispose of the goods on hand, even going so far as to withhold these goods from the market pending higher prices.

The obvious, ultimate result of this process is to tie up the financial resources of the country in stocks of goods at points in the distributive channels where these goods cannot satisfy the needs and wants of consumers. Furthermore, since the rise in prices is not paralled by a commensurate increase in wages, the actual quantity of goods reaching consumers tends to be reduced. A much greater proportion of the country's stored up savings—financial resources—than usual, is tied up in the production-distribution process, and is not doing the job as well. It is inevitable that, sooner or later, further expansion of the financial structure will be impossible. As this time approaches, higher and higher prices are paid for the loans necessary to carry the increased stocks, as evidenced by the increases in interest rates; bank loans are expanded and the ratios of reserves to liabilities indicate financial stringency.

The increasing financial stringency overtakes the increasing prices, and a crisis is at hand. For when the surplus stocks can no longer be carried, there is but one recourse and that is to sell them. They cannot be sold unless their price is definitely reduced. The rapidly falling prices resulting cause failures and forced liquidations, for each company's losses prevent its paying its creditors. The process of deflation continues until surplus stocks are worked down and financial resources built up whereupon production can again be recommenced.

As Prof. Fisher has pointed out it is the change in prices rather than the level of prices which influences business. It is well recognized, for

example, that men can do business at any price level, but that changing prices require much adjustment.

The effect of a price change in one month on business is necessarily merged with the effect of price changes in the preceding months. Thus if prices rise sharply for a few months, it tends to stimulate business, but if in the next few months they fall again the effect of the rising prices is often offset.

Just as the theory of business relationships which serves as a basis for this analysis called for a series which would measure the effective rate of change in commodity prices, it also calls for a series measuring the effective rate of change in interest rates. For although interest rates may be low, sharp increases are apt to have a deterring effect on business. Conversely a decline in a high rate of interest is important even though the rate yet remains high.

The fourth series used in the analysis was the average volume of business during the preceding 12 months as measured by the average percentage of total blast furnaces in blast. If business has been at a low level the natural reaction is towards higher levels. On the other hand if business is already at high levels it requires considerable stimulation to raise it to yet higher levels; the natural reaction is toward a lower level. Hence it is obviously important to include some measure of what business volume is at the given time when attempting to forecast what business volume will be in the future.

The fifth series used in the analysis was a series to represent the passage of time—or trend. For it is possible that as the business of the country becomes gradually better and better organized the same set of economic circumstances may have a gradually changing effect upon the changed course of business. In some cases the change is somewhat sudden. It was found, for example that the introduction of the Federal Reserve system marked a definite change in the effect of the several influences considered.

Uses Blast Furnace Index

The measure of business to which these series just described were related was the average percentage of furnaces in blast during the ensuing 12 months. The original percentage figures are taken from the IRON TRADE REVIEW. This index was chosen because it happens to be the business indicator which coincides most closely with the fluctuations of the business of the company with which I am connected. It is, however, very similar in its contours to the American Telephone & Telegraph Co. index of general business, to the Standard Statistics Corp. index of industrial activity, and to the Harvard Index of Manufacture.

Before the Federal Reserve system, if interest rates fell below 80 per cent of bond yields they continue to stimulate activity in the following year. Thus if interest rates were 80 per cent of bond yields the effect on the blast furnace percentage in the following year was plus ten per cent, whereas if the interest rates fell to 65 per cent of bond yields the effect became plus 20 per cent. Since 1914, however, interest rates lower than about 80 per cent of bond yields seem to have no more stimulative effect than the interest rates at 80 per cent. This may mean that business is so organized that it can take full advantage of falling interest rates as they decline.

HOW the Blast Furnace Index is being directly applied in the practical affairs of a large manufacturing company is shown in the accompanying article by Bradford B. Smith, chief statistician of the White Motor Co., Cleveland. The article is taken from a paper read by Mr. Smith Oct. 28 at Columbus, O., as a part of the management week program arranged by Ohio State university. Mr. Smith has found that the Blast Furnace Index coincides more nearly with the fluctuations of sales of his company than any other important business indicator.

It is apparent that nowadays it does not require as high interest rates as formerly to bring about a given depressive result. Thus an interest rate 130 per cent of bond yields has today an effect on future business conditions about equivalent to an interest rate 145 per cent of bond yields in pre-Reserve System days. If interest rates in New York are today more truly representative of interest rates throughout the country than they were before the Federal Reserve system, which is likely, this, then, would explain the difference between the effect of rates as measured in New York today and their effect formerly.

Observing the relationship between the rate of change in commodity prices and subsequent business conditions, it will be noted that this proves to be what would be expected: increases in the price level have a tendency to stimulate business whereas declines have the opposite effect.

It was necessary to apply a correction of trend during the years included in the analysis. The reasons for this correction are probably two: In the first place there has been a gradual increase in the efficieny with which industry is carried on—and as a result a fewer number of furnaces out of the total are capable of supplying the country's needs—those which are the more efficient. This would account for a downward trend, which would partly explain the sharp drop from 1906 to 1910. But there is a second reason for the particular drop during that period, which I believe is inherent in computing the percentage of furnaces in blast.

Correction Is Applied

This percentage is, of course, secured by dividing the actual number of furnaces in blast by the total number that could be in blast. Although there is not much error in the first figure, the second figure may be susceptible to considerable error according to the point of view held. The point of view held here is economic, rather than physical. Thus after the sharp decline in business in 1907 a good many furnaces blew out, and although from a physical point of view a considerable number of idle furnaces in the immediate years following could have been blown in, from an economic point of view they were dead forever—they were too inefficient to again compete. Larger and better furnaces took over their work. This is witnessed by the fact that the recovery in pig iron production was much greater than the recovery in the blast furnace percentage.

From the economic point of view there are also two considerations which would tend to invalidate the use of this analysis for forecasting.

In the first place the factors which the theory of business reactions indicated were to be employed in the analysis may be the wrong factors—or they may be factors whose importance may be dwarfed by the entrance of new factors into the situation. Unquestionably the factors selected and measured are not the ultimate factors—thus the interest rate in itself and by itself is not so much of a factor, it is rather the condition of the supply and demand for capital which is indexed by the interest rate that is the important factor. And back of these are the growth of the population, the success of crops, the adjustment of human enterprise to human needs. Each of the factors selected and measured

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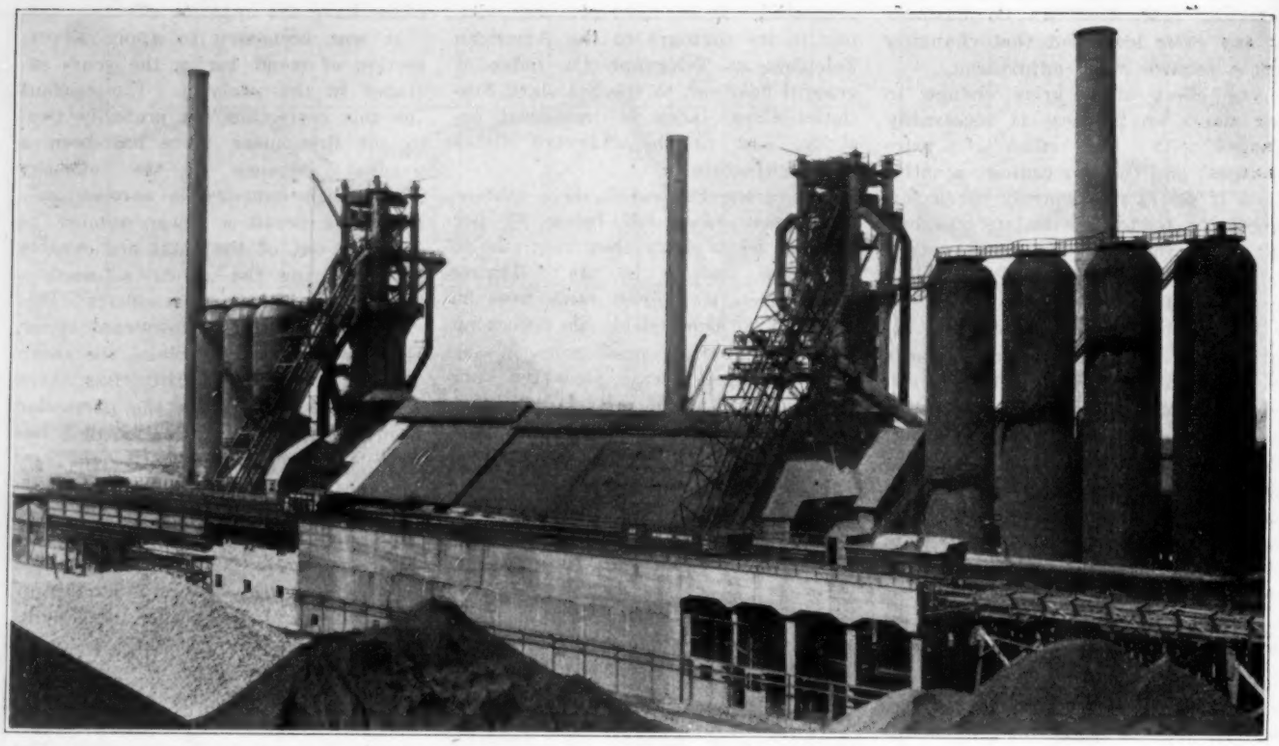


Blast furnace group of the St. Louis Coke & Iron Corp., Granite City, Mo. The stack at the right was first operated in 1921. The new stack stack just completed is shown at the left.

Second Stack Begins Campaign

Blast Is Applied to New Blast Furnace in the St. Louis District in Less Than a Year After Excavation Work Started—Surplus Gas Is Used for Generating Power for Public Consumption—Description of Layout

By J. D. Knox

WITHIN a period of 239 days, the new stack of the St. Louis Coke & Iron Corp., Granite City, Mo., was built and placed in blast, a record which is considered remarkable for a complete plant. Ground for the new stack was broken Nov. 10, 1925 and the blast was applied Oct. 14, 1926. The new stack, known as "B" and with a normal rated capacity of 600 tons in 24 hours, is built adjacent to the corporation's "A" furnace. The latter stack was first operated Feb. 7, 1921 and since has been burdened for merchant grades of iron.

The new "B" furnace is blown with 12 tuyeres. The stack, 92 feet high, with a hearth of 18½ feet diameter and a bosh of 22½ feet diameter, has a content of 25,500 cubic feet. It is supported on six cast-iron columns and is equipped with a 13-foot large bell and a 5½-foot small bell. The lining includes 470,000 bricks of 9-inch equivalent.

The cast house is of structural steel skeleton, roofed and sided with corrugated sheet steel. It is 200 feet long and 46 feet wide at the furnace. A crane of 15 tons capacity is provided to facilitate handling materials about the furnace floor.

Open-top Ladles Used

Hot metal from the furnace is cast into 65-ton open-top ladles, four being provided. Slag from the furnace is handled in 330 cubic-foot cinder cars, four ladles being provided for this purpose. All hot metal is run through the pig machine.

No new equipment for stocking the raw materials was added. The ore yard was extended. Material from the stock piles is transferred by the ore bridge to the transfer car which operates on the trestle. This car in turn, transfers the ore to the respective trestle bins as required. The stock bins are of the double-pocket type and are of steel plate construction. Thirteen are set aside for ore and limestone while the center bin is given over to the storage of coke. A double compartment scale car operates beneath the stock-house bins and transfers ore and limestone to the skip hopper. Coke is transferred direct from the central bin to the skip cars, all breeze being removed by a screen system and discharged into hopper cars outside the stock house. Two skips are used for filling the furnace. Each has a holding capacity of 180 cubic feet. The skip cars are operated alternately over the skip bridge, by a single-drum hoist, actuated by a 150-horsepower motor. The stock is received at the top of the furnace by a motor-operated revolving distributor. Both the large and small bells are air operated by the blast pressure.

Blast is supplied the furnace by a turbo blower, which at maximum capacity will deliver 60,000 cubic feet of air a minute at a rated maximum pressure of 30 pounds a square inch. This unit weighs approximately 275,000 pounds. Three stoves, 22 feet in diameter and 105 feet high, are provided for heating the blast. The combined heating surface amounts to

76,000 cubic feet. The stoves are of 2-pass side-combustion type and are provided with checker openings 4 inches square. The dimension of the checker brick is 10½ x 6½ x 2½ inches. Approximately 473,000 bricks of 9-inch equivalent was used to line the stove. Insulation was used throughout the stove lining wherever possible to prevent radiation of heat. All hot-blast valves at the stoves are of the mushroom type; all gas burners at the stoves are equipped with a motor-driven fan. Products of combustion from all three stoves are exhausted into a steel chimney lined with fire brick, 8 feet internal diameter at the top and 220 feet high.

Four Bleeders Provided

Gas is led out of the furnace by four uptake pipes which terminate in a bleeder valve. Centrally located in each uptake is a takeoff pipe, each two of which converge to form a downcomer. The two downcomer pipes discharged into a 24 x 40-foot centrifugal dust catcher which entraps any dust particles carried out of the top of the furnace by the velocity of the gas. The gas leaves the top of the centrifugal dust catcher and is led into a Feld-type washer, 16 x 45 feet. Incidentally, this type washer is being installed at many blast furnaces in the Pittsburgh district.

The Feld-type washer includes a series of superimposed sections. Ports for the passage of gas are provided in the bottom of each section. Gas is led into the bottom of the washer and passes through each chamber, finally leaving at the top. In each chamber is a series of perforated cones which are mounted on a cast-iron spider. The shaft, which carries the spider, is mounted in a bearing of the antifriction type for the purpose of minimizing power requirements. Water is passed into the top of the washer and overflows from one chamber to another through the ports. The gas rises to the top of the washer through the same ports. The dust, entrapped by the water as it flows through the ports, leaves at the bottom.

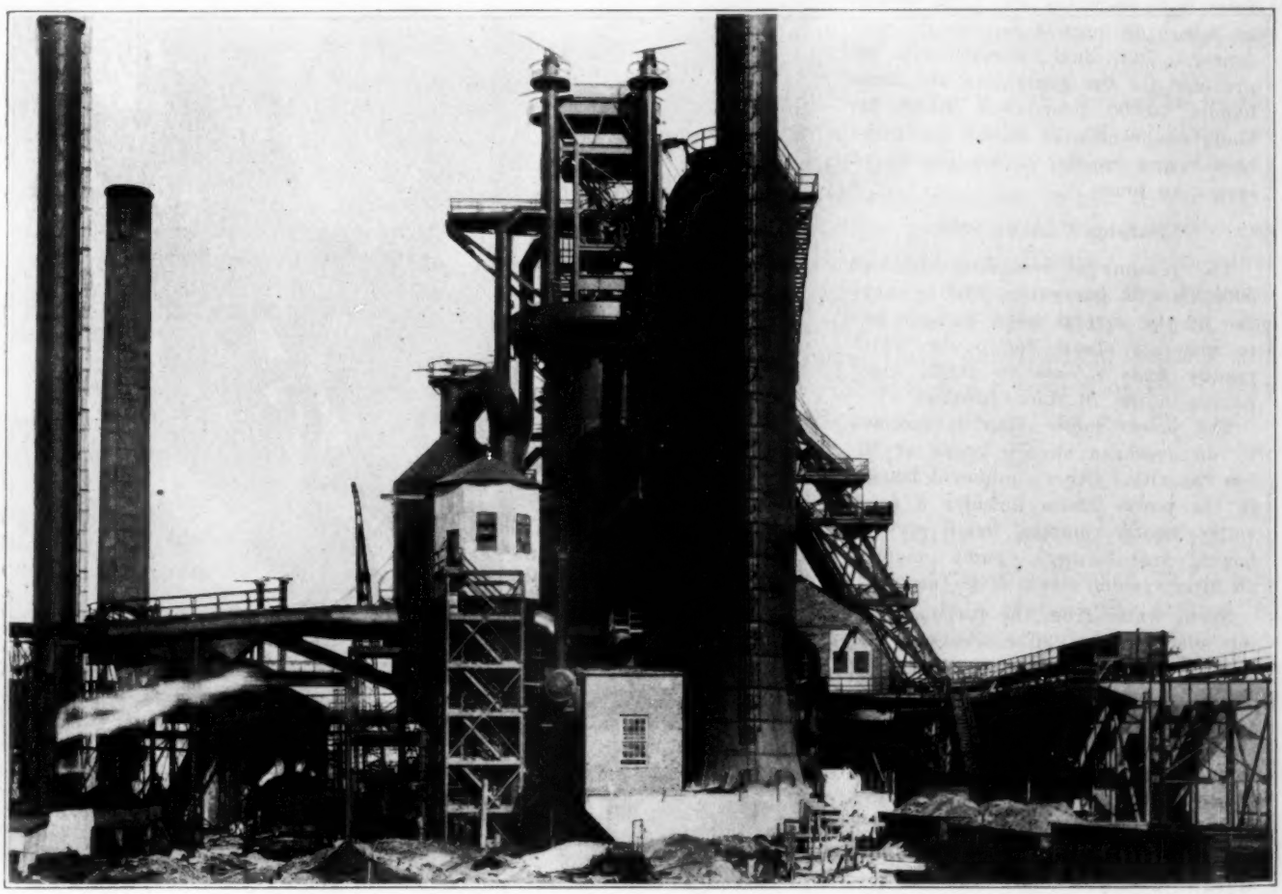
In actual operations the cones revolve with the motor-driven shaft, the centrifugal force atomizing the water at the upper end. The action is similar to horizontal sprays. In other words, a number of cascades formed of numerous drops of water are produced by the centrifugal force of the cones and the gas in transit from the bottom to the top of the washer must pass through these cascades. A large part of the cleaning is done in the lower part of the washer while cooling of the gas is accomplished in the upper part.

A considerable quantity of the flue dust is recovered by a Dorr-type thickener, which is equipped with 62-foot diameter double trays. Three disk filters, 8½ feet in diameter, operate in conjunction with the dust recovery system.

Stokers Are Employed

Steam for operating the turbo engine, pumps, and other equipment around the plant, is generated by three 834-horsepower boilers. Steam pressure is maintained at 230 pounds a square inch. Two boilers are stoker fired for coal and coke breeze while the other unit is equipped for gas firing. The boiler installation is housed in a brick and steel building 60 x 75 feet, which merely is an extension of the old boiler house. A superheater is provided to superheat the steam 125 degrees Fahr. Products of combustion are exhausted into the atmosphere by a chimney 10 x 200 feet.

The power house building serving the "A" stack was extended 50 x 66 feet and a leanto, 22 x 50 feet, was



EAST ELEVATION OF THE NEW STACK. GAS CLEANING EQUIPMENT IS SHOWN AT THE LEFT OF THE BRICK BUILDING AND THE BOILER HOUSE AT THE EXTREME LEFT

Makers of Principal Equipment

Furnace lining	Harbison-Walker Refractories Co., Pittsburgh
Revolving distributor	Arthur G. McKee & Co., Cleveland
Cooling copper	Keystone Bronze Co., Pittsburgh
Stove lining	Parker-Russell Mining & Mfg. Co., St. Louis
Stove insulation	Celite Products Co., New York
Chimney valves	Freyn Engineering Co., Chicago
Stove burner fans	B. F. Sturtevant Co., Boston
Stove and boiler chimney, boiler breeching, coke breeze equipment, general contractor	Riter-Conley Co., Pittsburgh
Cast-house crane	Northern Engineering Works, Detroit
Superheaters, soot blowers, boilers	Babcock & Wilcox Co., New York
Boiler and stove gas burners	American Heat Economy Bureau, Inc., Pittsburgh
Stokers	Combustion Engineering Corp., New York
Fans	B. F. Sturtevant Co., Boston
Pipe covering	Johns-Manville, Inc., New York
Coal handling equipment	Milwaukee Electric Crane & Mfg. Corp., Milwaukee
Turbo blower	Ingersoll-Rand Co., New York
Turbo generator, pumps, pump motors	Allis-Chalmers Mfg. Co., Milwaukee
Rotary converter, main switchboards	Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.
Gas washer	Bartlett-Hayward Co., Baltimore
Thickener	The Dorr Co., New York
Filters	United Filter Corp., Hazelton, Pa.
Ladle tilt engine	Pittsburgh Coal Washer Co., Pittsburgh
Hot metal ladles, cinder cars	William B. Pollock Co., Youngstown
Scale car	Atlas Car & Mfg. Co., Cleveland
Hoist engines	Lidgerwood Mfg. Co., New York
Pumps	Ingersoll-Rand Co., New York
Transformers	Pittsburgh Transformer Co., Pittsburgh
Oil filter system, feed-water heater	Dravo-Doyle Co., Pittsburgh
Spray nozzles	Spray Engineering Co., Boston
Steam and water piping	Pittsburgh Piping & Equipment Co., Pittsburgh
Excavating and concrete work	Baumes McDevitt Co., St. Louis
Piles	Raymond Concrete Pile Co., New York

added. In addition to the turbo blower, used for supplying the blast to the stack, the power house structure houses two turbo generators each with a capacity of 5000 kilowatts. Each generator weighs approximately 150,000 pounds and operates on a voltage of 23,000. All exhaust steam from the generators and turbo blower is passed through a barometric condenser. Individual condensers are provided for the generators and these handle 70,000 pounds of steam an hour; one condenser serves the turbo blower and handles 55,000 pounds of steam an hour.

Surplus Current Sold

The reason for installing the two 5000-kilowatt generators was to make use of the surplus blast furnace gas to generate steam for power which readily finds a sale to utility companies in the St. Louis district.

The power house floor is spanned by an overhead electric crane of 30-ton capacity. Other equipment housed in the power house includes a feed-water heater, pumps, main switchboard, transformers, pump motors, oil filter system, steam traps, etc.

Spent water from the furnace cooling system, from all condensers, and that recovered from the washer is led to a spray pond, 165 x 420 feet, with an average depth of 3 feet. The cooling system is equipped with 960 two-inch nozzles. A small spray pond is provided for cooling the clear water from the Dorr thickener. This includes an area of 75 x 110 feet. The spray system includes five motor-driven pumps and two steam turbines.

An additional storage tank was installed at the water treating plant. In the construction of the "B" stack of the St. Louis Coke & Iron Corp., the Riter-Conley Co., Pittsburgh served as the general contractor and designing engineers and supervised the building program.

Forecasts Sales by Furnace Index

(*Concluded from Page* 1239)

may thus be considered as symbolic of significant fact rather than significant fact itself. If they should fail to reflect the facts, or come to represent different fact, then the validity of this analysis for forecasting is diminished.

The second economic consideration tending to invalidate the use of this type of analysis for forecasting, is that in human affairs all things change. The relationships discovered may change. One such change has already been observed—when the Federal Reserve system was introduced. Future changes may also be expected. This is perhaps the most fundamental weakness in all statistical forecasting. One the other hand it is a weakness which is shared by all forecasting whether it be statistical or nonstatistical in nature. For the only basis of forecasting the future is past experience; and if past experience fails to be indicative of future experience, not only the purely statistical, but all other scientific forecasting is deprived of its very foundation.

VIEW TAKEN FROM THE ORE BRIDGE SHOWING THE SKIP BRIDGE UPTAKE AND DOWNCOMER GAS MAINS AND THE ARRANGEMENT OF THE TRESTLE BINS

Editorials

Blast Furnace, Sales Barometer

ONE of the most encouraging developments of recent years has been the increase in available statistics and measures of industry, together with the growing intelligent use of these valuable tools. This advance is tending to lift business out of the blindfolded age of management into the era of more scientific direction. To this, many authorities attribute the growing moderation in the fluctuations of the curve of the business cycle.

To have an abundance of statistics is one thing and to put them to practical use is another. The Index of Blast Furnace Activity, first computed by Col. L. P. Ayres of the Cleveland Trust Co., and carried forward monthly by IRON TRADE REVIEW, has won wide recognition as a faithful indicator of the pulse of general industry. But the Index apparently is capable of even closer application. How it has been utilized as a practical basis for forecasting sales one year ahead by a large corporation is shown in an article in the current issue of IRON TRADE REVIEW.

The chief statistician of the White Motor Co. found the Blast Furnace Index the best available measure for forecasting the company's sales. Because the index runs back over a long period of years he found it possible to test out and develop a method of forecasting its fluctuations one year ahead. Practical application of this forecast is then made to company sales quotas for the coming year. It is noteworthy that the forecast of the Index for 1927 shows a decline, but one that is remarkable for its mildness. If the Blast Furnace Index is correct in its readings business has nothing to fear from a severe depression in 1927.

To be classified as useless information: Sixty per cent of the dust in the New York subways is pulverized steel. Over a ton of brake shoes is ground to dust each month. The air in the cleaning room of the average foundry has in suspension less metallic dust than the subways.

Coal Industry Leans to Sliding Scale

RECENT events in the bituminous coal industry more strongly suggest the possibility of an equitable basis of wage payments on a sliding scale. The mine operators found it was impossible to produce coal and pay the wage rates in accordance with the Jacksonville agreement; the result was that their mines were closed, thousands of workers were thrown out of employment and the industry was brought practically to a standstill.

Then came an abnormal demand, due to the British coal strike. The operators were called on to supply British consumers and markets previously filled by British production. Cold weather and enlarged needs for domestic and industrial purposes in the United States contributed to the difficulties of the situation. Prices increased, and many of the operators brought their former employes back to work by paying more than called for by the Jacksonville scale.

They could afford to pay the higher wages. Economic conditions in the industry permitted them to do so, while previously it could not be done, despite dictation and domination by trade unions. This was a clear-cut example of wages and selling prices moving in consonance, as they do in many of the bar iron and sheet mills, the only organized division of the iron and steel industry.

Of course, it is better for the mines to be operated on an open shop basis, but if relations are to be had with the miners as an organization, a sliding scale of remuneration might avoid arguments and strikes as to what the industry can afford to pay. Operators starting their mines and raising wages up to or beyond the Jacksonville level made it clear that they expect employes to follow them down when demand and prices relax. This is the principle of the sliding scale; it needs only to be worked out on specific terms.

Hoover Plumbs Buying Power

SECRETARY of Commerce Hoover in his annual report not only reveals the stature of the United States in world trade but portrays the country's purchasing power as well. He reveals the United States as a world merchant 100 per cent greater than in 1913, holding much of its wartime gains, doing more than its share to absorb products from the rest of the world—a picture quite contrary to that frequently painted.

Making due allowance for the decreased buying power of money, United States imports in

1925 were higher than those in 1913 by 136 per cent in value and 66 per cent in quantity. Imports by the remainder of the world went up only 46 per cent in value and fell off 6 per cent in quantity. Europe alone registered a gain of 32 per cent in value of imports and a loss of 13 per cent in quantity.

Exports from the United States last year were 98 per cent over those of 1913 in value and 37 per cent in quantity—falling far short of the improvement in imports. Exports of the remainder of the world in 1925 increased 48 per cent over 1913 in value but lost 5 per cent in quantity. For Europe, the gain in value of exports was 20 per cent and the decline in quantity 24 per cent.

On the basis of total trade, still comparing 1925 with 1913, the United States shows an advance of 114 per cent in value and 49 per cent in quantity. Meanwhile, the remainder of the world was increasing only 47 per cent in value and receding 6 per cent in quantity. Europe by itself went up 26 per cent in value and dropped back 18 per cent in quantity.

For a proper appreciation of the position of the United States, it must be recalled that the large volume of forced exports of farm products in the war period was bound to decline after the war. To maintain the position, manufacturing had to step into the breach and compete in world markets with lower foreign wages and depreciated currencies.

From still another viewpoint, consider that from 1913 to 1925 imports rose 136 per cent and exports only 98. In this period the productive capacity of the country was increased probably one-half. Yet in the face of this adverse balance of trade for 1913-1925 as a whole and the tremendous outpouring of domestic plants, the country was never more prosperous. Secretary Hoover's statistics afford a new gage of the country's absorptive capacity.

Any Tax Cut Would Be Welcome

BASED on a surprisingly strong surplus from this year's tax revenues, President Coolidge and Secretary of the Treasury Mellon are hoping to put through congress early in the coming short session a reduction of 10 to 12 per cent on personal and corporation income taxes being paid this year for the calendar year 1925. This would amount to refunds to those who already have paid their 1925 taxes in whole or in part. It is estimated that corporations would benefit by eighty millions dollars and individuals by some seventy million.

The proposed refund, of course, would not be a permanent reduction of taxes. Schedules lowered last year have not been able to demonstrate fully their revenue-pulling power. Radicals and demagogs in both houses naturally will oppose changes that may lower taxes in the higher brackets. Time will be short for its consideration and the proposed measure may strike a number of rocks in the meantime.

Prospect of even further tax relief at this time, however, comes as a wholesome note in the business outlook. It shows the administration's financial machinery among other things to be truthworthy and capable of further sound service to the economic fabric later on.

Much has been made by the lay world of Henry Ford's scrapping of war-built merchant ships. A modern beating of swords into plowshares, it has been termed. Fact is, the ship plates being transformed into Fords by the alchemy of the open-hearth may have been car sides or plow points in some previous existence.

What Our Readers Are Thinking

Steel Industry the Sire of Safety

THE National Safety council was organized through a committee of the Association of Iron and Steel Electrical Engineers. The proper date for the starting of the safety movement is 1906, when the United States Steel Corp. began installing safety devices. That was a particular effort, of course, but the steel game was rough in those days, and other companies were trying to make their plants safer for their men.

It was a natural thing that the engineer should be the first man to sense that accidents constituted a waste, the most lamentable of all wastes. The efficiency idea was beginning to gain a hold at that time, and the humantarian sentiment was gaining in strength. I believe, however, that the humanitarian element was the stronger, for Elbert H. Gary, when he placed the matter before the directors of the United State Steel Corp., said: "Gentlemen, it is the right thing to do, and if you back us up, we will make it pay."

The corporation did adopt safety measures, and they did pay. In spite of the enormous sums spent for hospitals to care for injured men, and in spite of the burden of a substantial net reduction in its accident bill.

It was in 1910, however, that safety became so prominent a subject on the program of the Association of Iron and Steel Engineers that it became evident that the association could not handle the problem alone. It was decided that the only way to handle these problems was to form an independent organization. In 1912 a representative of the association traveled 4000 miles, visiting industrial executives, to sound out the field, and in September of that year the first congress was held at Milwaukee, Wis.—LEW R. PALMER, *vice president, National Safety council, in interview with Detroit News.*

The Reader's Page

Vol. LXXIX, No. 20 IRON TRADE REVIEW Nov. 11, 1926

Blast Furnace Business Index Proves Accurate

IN A leading article in this issue there is a striking verification of the general accuracy of IRON TRADE REVIEW'S blast furnace index of basic business conditions. The blast furnace business dial has been a regular feature of this publication's Business Trend section for several years. The theory was developed originally by Col. L. P. Ayres, famous business statistician of Cleveland, and first expounded in IRON TRADE REVIEW.

Describes Industrial Heating Furnaces. Page 1231.

Briefly it is that business conditions are normal when 60 per cent of the country's blast furnaces are active; variations from this point may be shown from month to month as furnace operations increase or decrease. In charting its own business over a period of years, the White Motor Co., Cleveland, sought a comparable index. IRON TRADE REVIEW blast furnace index was found remarkably similar to its own business experience.

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IRON TRADE REVIEW is published every Thursday by the Penton Publishing Co., Cleveland, O. Member, Audit Bureau of Circulation; Associated Business Papers, Inc.; and National Publishers Association.

Charles J. Stark .....Editor
Earl L. Shaner .....Managing Editor
John D. Pease .....Advertising Director
Francis F. Light.....Circulation Manager

Branch offices 1037 Old South Bldg., Boston; 1147 People's Gas Bldg., Chicago; 408 Edwards Bldg., Cincinnati; 2203-2206 No. 220 Broadway, New York; 2148-49 Oliver Bldg., Pittsburgh; 24 California street, San Francisco; 1653 Pennsylvania avenue, Washington. Foreign offices: Prince's Chambers, Birmingham, Eng.; 2-3 Caxton House, Westminster S. W. 1, London; 23 Rue de la Bienfaisance, Paris, France; Kurfurstendamm 136, Berlin-Halsensee, Berlin, Germany.

Cable address: *PENTON*, Cleveland; *IROTRAPEN*, London.

Terms: Subscription in United States, Cuba and Mexico, $6 per year; in Canada, $8.50 per year and in Great Britain and other countries, £2:0:0 per year. *Entered at the Postoffice at Cleveland as Second Class Matter.*

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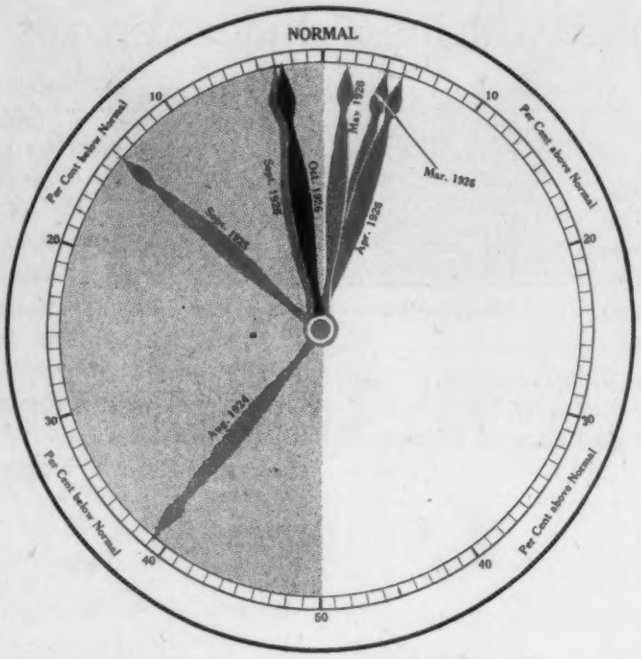
The Business Trend

Blast Furnace

The Dial represents the Blast Furnace Index of Business which is based upon a 40-year record of furnace activity. It is a barometer of general trade.



Business Dial

When 60 per cent of all the country's furnaces are in blast business conditions are normal. The Index is now lower than the normal point on the dial.

Blast Furnace Activity Increases

By JOHN W. HILL, Financial Editor

OCTOBER brought a slight forward hitch in the Blast Furnace Business Dial. During the month there was a net gain of two furnaces in blast and an increase of two in the total list of available furnaces. At the close of the month there were 373 serviceable stacks in the country of which 218 were active.

THE percentage of activity was 58.5 per cent compared with 58.3 per cent one month before and 54.1 per cent one year ago. Since normal is 60 per cent, the Dial stands at 2.5 per cent below normal whereas it was 3 per cent below normal at the close of September and nearly 10 per cent below normal 12 months previously.

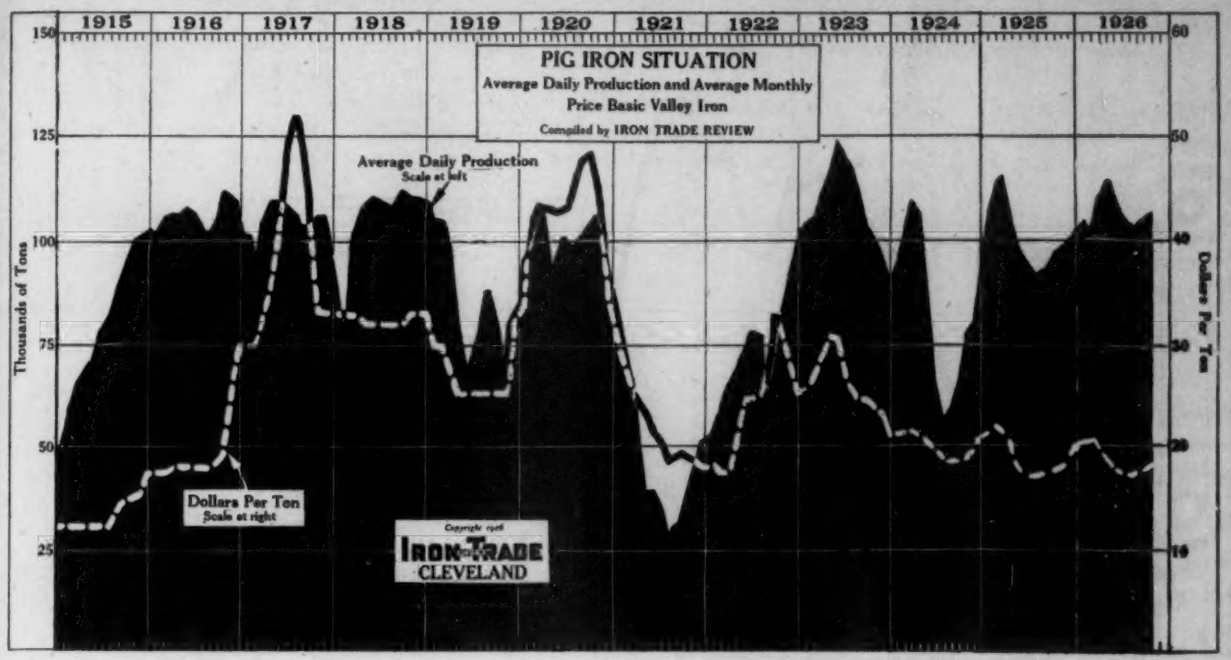
PIG iron demand and production have received a fillip from the British coal strike and soaring coal prices. Blast furnace operating costs have been increased and buyers have been more inclined to cover their requirements against too great price advances. Finished steel production costs also are rising.

ACCORDING to the evidence of the Blast Furnace Dial general business continues at a satisfactory level. There has been some small recession in building construction. Automobile sales and outputs have declined and steel mill operations are less active. But on the whole no marked downturn has appeared nor is in prospect.

ONE of the most perplexing uncertainties of the outlook revolves about the amount of equipment buying by the railroads next year. In recent months the roads have been holding down expenditures for new cars. During October only 2840 cars were bought compared with 11,145 in October, 1925.

SHOULD more normal buying by the roads appear, it would go a long way in offsetting smaller consumption of steel by such users as the building and automobile industries. Fortunately the country has passed through a period of unprecedented fall traffic without any far-reaching car shortages. Apparently this was accomplished by letting out a few more links of railroad efficiency.

The Business Trend

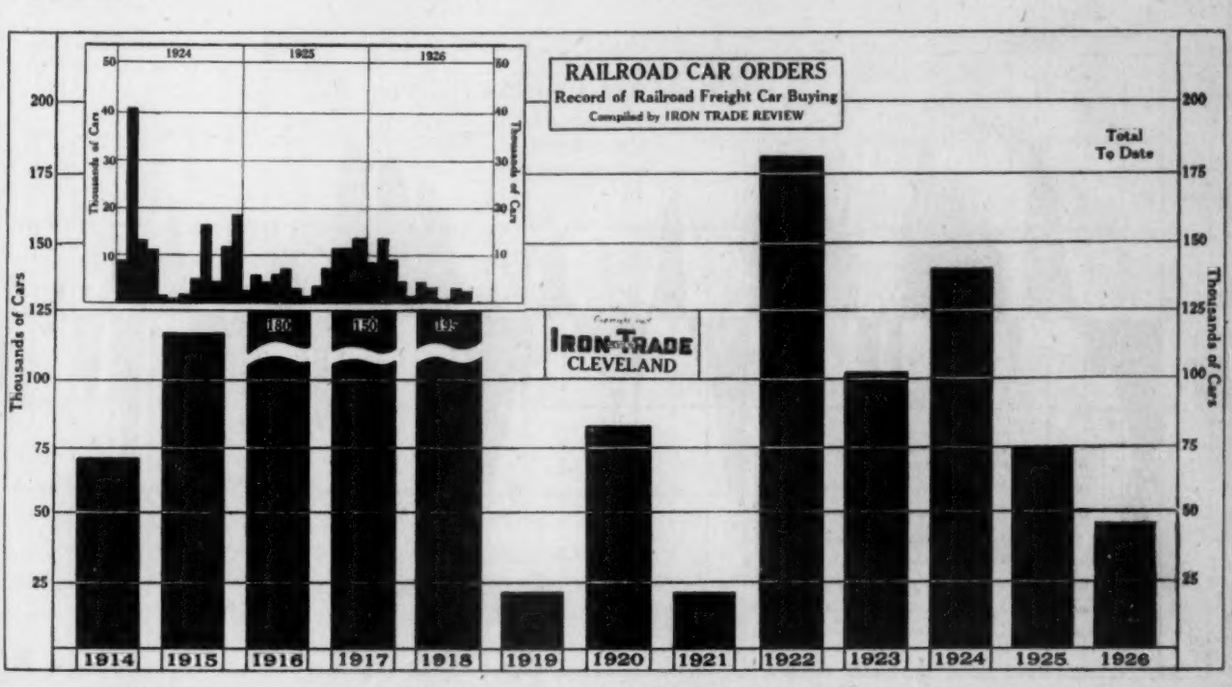

PIG IRON SITUATION
Average Daily Production and Average Monthly Price Basic Valley Iron
Compiled by IRON TRADE REVIEW
Average Daily Production
Scale at left
Dollars Per Ton
Scale at right
Thousands of Tons
Dollars Per Ton
1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926
IRON TRADE
CLEVELAND

Pig Iron Situation

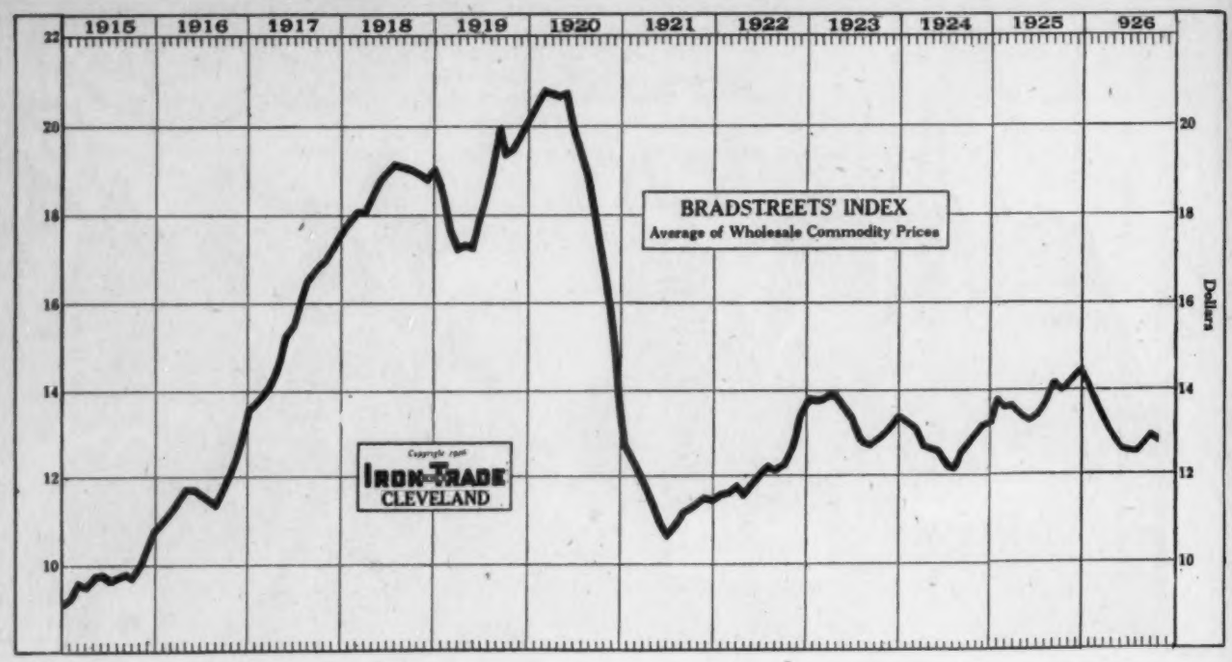
REVERBERATION of the British coal strike is found in the course of the pig iron market. Higher fuel prices have increased pig iron production costs and stimulated demand and outputs. During October the daily average rate of pig iron production was 107,134 tons compared with 105,442 tons in September and 97,351 tons in October, 1925. Output was the largest for any October since 1918 and the highest for any month since last June. Prices have been advancing.

Car Awards

ONE of the uncertainties overhanging the iron and steel industry is that of the probable demand for new railroad equipment. So far the railroads have failed to fulfill expectations. In October they purchased 2840 cars compared with 3335 in September. In October, 1925, the roads purchased 11,145 cars. For the year to date 47,460 cars have been ordered. This compares with 48,540 cars that have been ordered during the first 10 months of the previous year.



The Business Trend

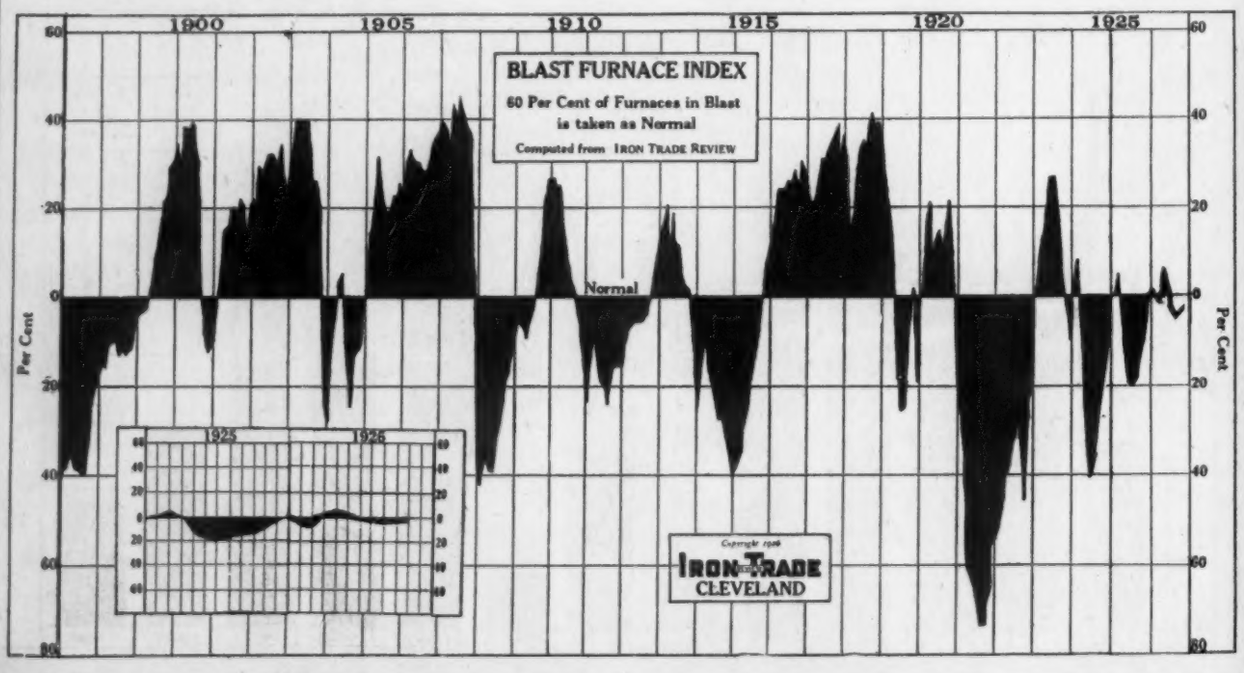


Bradstreet's Index

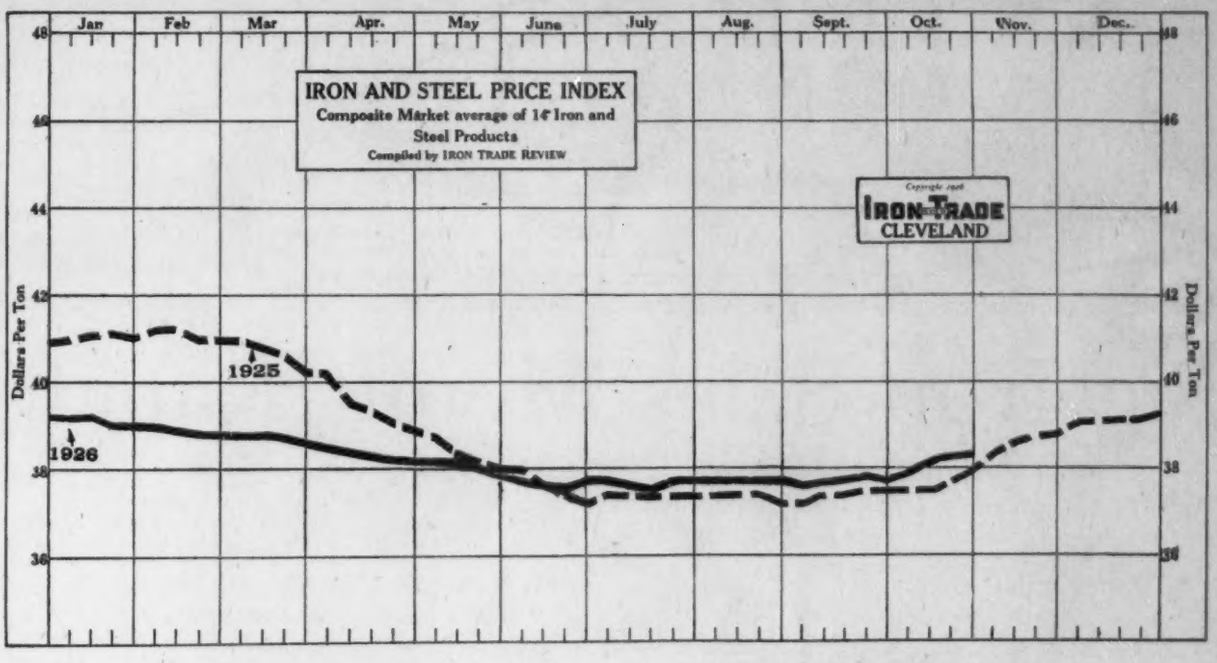
ONE of the outstanding characteristics of the wholesale price situation in the last year has been the stability of industrial prices and the weakness of agricultural ones. During October, stability of most prices continued. Bradstreet's wholesale price index shows a slight downward swing for the month, the result of the sharp declines for cotton, metals, textiles and livestock. The index is now 11 per cent below the level of Dec. 1, 1925, and it is 20 per cent above the low point reached in 1921.

Blast Furnace Index

DURING October blast furnace activities increased with the addition of two furnaces to the active list. Two furnaces also were added to the list of available ones in the country bringing that total to 373. At the close of the month 218 furnaces were in blast against 216 one month before. This was 58.5 per cent against 58.2 per cent one month before and theoretical normal of 60 per cent. The Blast Furnace Index therefore is 2.5 per cent below normal compared with 3 per cent below one month ago.



The Business Trend

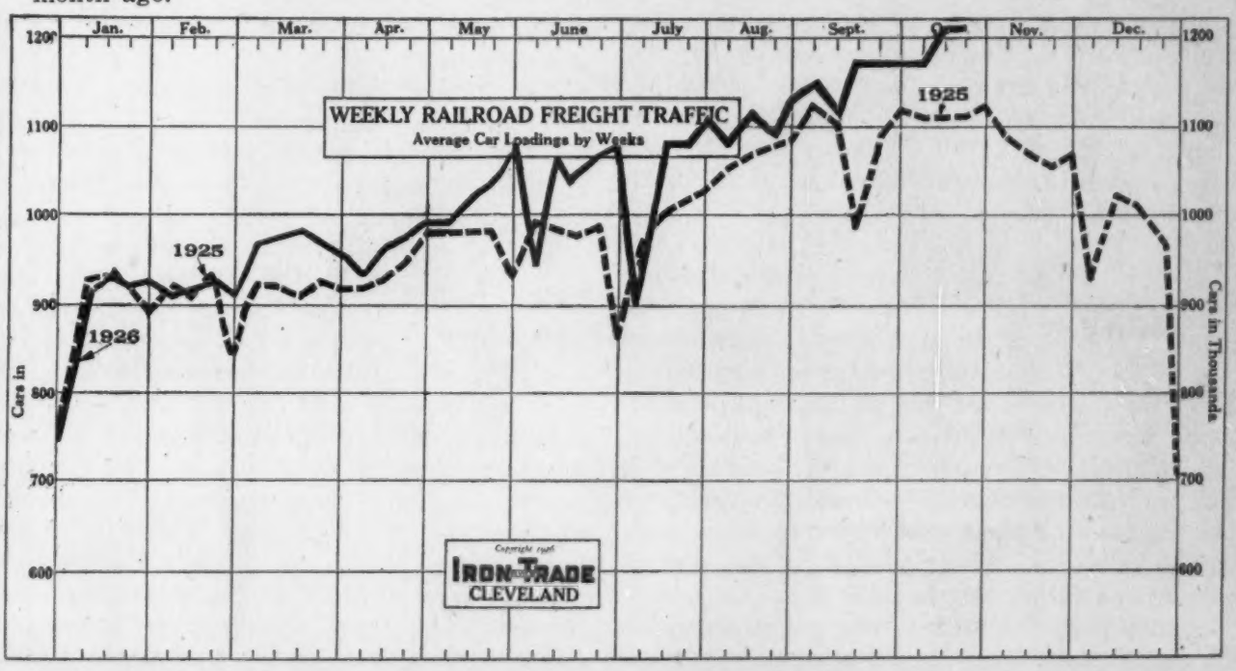


Steel Price Index

IRON TRADE REVIEW composite market index has been moving into higher ground over the last two months. The first stimulus for the rise came from advances in certain finished products including sheets. More recently, higher pig iron prices the result of soaring fuel costs have helped to lift the average. With demand slackening for finished products some price concessions have been reported but nominal quotations have been retained. The average one week ago stood at $38.30 against $38.08 one month ago.

Freight Car Loadings

APPARENTLY the country has gone through the greatest of all fall traffic movements without a shortage of cars developing. Outside of some coal districts little complaint of inadequate car supply has been heard. During the weeks ended Oct. 16 and 23, freight movements, for the first time in history, overtopped 1,200,000 cars weekly. Since the first of the year 44,014,481 cars have been loaded against 42,338,949 cars in the light period of 1925. The gain over last year was 4 per cent.



Pig Iron Sales Mount Rapidly

Melters Come Into Market, with Prices Rising, and Place Over 200,000 Tons—
October Ingot Output Sets Monthly Record—Sheet and Tin Plate
Prices Affirmed—Steel Rate Is 80 Per Cent

PIG iron sales, chiefly for first quarter delivery, have exceeded 200,000 tons in the past week with the strength of the buying movement apparently not spent. Considerable first quarter tonnage would normally be placed at this time, but rising prices of iron, reflecting recent advances in fuel, have proved a spur. Efforts of some consumers to buy beyond the first quarter have been repulsed. Sales include 90,000 tons at Cleveland, 50,000 at Buffalo, 32,000 at St. Louis and 15,000 at New York.

Fuel's vitality as a market factor has been evidenced largely by pig iron in the past week. Coke prices in the Connellsville regions have steadied but by-product coke prices show some stimulation, notably at Detroit and in southern Ohio. Pig iron prices, with the exception of the Chicago and Birmingham districts, have solidified their recent gains or registered advances. Mahoning valley producers are asking $20 for No. 2 foundry and malleable and $20.50 for bessemer. At Cleveland the foundry grade is quoted at $21 to $21.50. Eastern Pennsylvania furnace interests have withdrawn all prices under $22.50, base, furnace.

Sheet Output Shrinking

The finished steel market continues to drift slowly downward both in point of orders and production but without signs of an accelerated rate of contraction. Steel ingot production for all districts is averaging just under 80 per cent, with Steel corporation subsidiaries operating slightly heavier than independent interests. The heavy finished lines are maintaining their position better than some lighter products. Sheet production has shrunk as much as 10 per cent in some districts.

Statistically, the present market continues on a sound footing. Steel ingot production in October proves to have set a new high October record with a total of 4,092,548 tons and a daily average of 157,406 tons. This is a gain of 161,873 tons over September and compares with 3,888,873 tons in October, 1925. Production in the first 10 months of 1926 has totaled 39,939,398 tons, compared with 36,266,920 tons in the comparable period of 1925. Steel ingot production, like pig iron, is practically one month ahead of last year.

Statistics Are Favorable

On the heels of the splendid showing made by both pig iron and steel ingots in October, comes the unfilled tonnage report of the United States Steel Corp. as of Oct. 31, which is expected to show a gain of almost 200,000 tons over Sept. 30. This would bring the unfilled orders of the Steel corporation almost to 4,000,000 tons or the highest point since last April. Heavy bookings of rails and a moderate recession in shipments in October are factors in this situation.

New York subway work dominates the structural steel market. Inquiry for over 23,000 tons has come out, one section of 11,500 tons is about to be closed and 1650 tons has been placed this week. Small tonnages are the rule.

Think Strike End Near

Cable advices from England are to the effect negotiations being conducted by the government give promise of settlement of the coal strike within a week or two. District settlements with a national framework, maintaining a minimum basic rate and the ascertaining methods previously used, have been proposed. The ratio of wages to profits would be 87-13 to 85-15. The number of miners at work has increased to 300,000. British consumers are placing large tonnages of pig iron and steel on the continent. One Birmingham importer is awaiting delivery of 50,000 tons of pig iron and 70,000 tons of finished steel. British production

after the strike is expected to exceed all records since the war.

Heavy buying of track fastenings is in prospect. The New York Central is inquiring for 3,000,000 tie plates, 40,000 to 50,000 kegs of track spikes and 20,000 kegs of track bolts. The placing of 50,000 tons of rails at Chicago, including the Missouri Pacific requirements, brings the season's rail bookings in the West up to 550,000 tons.

For the ninth consecutive week, IRON TRADE REVIEW composite of fourteen leading iron and steel products shows a gain, being $38.43, compared with $38.30 last week and an average of $38.08 for October.

Prices, Present and Past

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	Nov. 10, 1926	Oct., 1926	Aug., 1926	Nov., 1925
PIG IRON				
Bessemer, valley, del., Pittsburgh	$22.26	20.86	19.76	22.61
Basic, valley	18.50	17.85	17.50	19.85
Basic, eastern del., eastern Pa.	22.00	21.00	21.00	22.70
*No. 2 foundry, del., Pittsburgh	21.76	20.11	19.26	22.11
No. 2 foundry, Chicago	21.00	21.00	21.00	22.75
*Southern No. 2, Birmingham	20.00	20.00	21.00	21.00
*Southern Ohio, No. 2 Ironton	20.00	20.00	19.90	21.00
**No. 2X, Virginia furnace	23.00	22.50	22.75	23.00
**No. 2, eastern del., Phila.	23.76	22.51	22.01	24.01
Malleable, valley	20.00	18.35	17.50	20.35
Malleable, Chicago	21.00	21.00	21.00	22.75
Lake Superior charcoal, Chicago	27.04	27.04	29.04	29.04
Gray forge, val., del., Pittsburgh	21.26	19.61	19.01	21.61
Ferromanganese, del., Pittsburgh	104.79	99.79	92.79	119.79
*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.				
COKE				
Connellsville, furnace, ovens	5.00	3.65	2.85	6.35
Connellsville, foundry, ovens	6.00	4.65	3.60	6.85
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	36.00	36.00	36.00	35.25
Sheet bars, open-hearth, Pittsburgh	36.00	36.00	36.00	35.25
Billets, open-hearth, Pittsburgh	35.00	35.00	35.00	35.00
Wire rods, Pittsburgh	45.00	45.00	45.00	45.50
FINISHED MATERIAL				
Steel bars, Pittsburgh	2.00	2.00	2.00	2.00
Steel bars, Chicago	2.10	2.10	2.10	2.10
Steel bars, Philadelphia	2.32	2.32	2.27	2.32
Iron bars, Philadelphia	2.27	2.22	2.27	2.22
Iron bars, Chicago, mill	2.00	2.00	2.00	2.00
Beams, Pittsburgh	2.00	2.00	2.00	1.85
Beams, Philadelphia	2.22	2.22	2.32	2.17
Beams, Chicago	2.10	2.10	2.10	2.10
Tank plates, Pittsburgh	1.90	1.90	1.90	1.85
Tank plates, Philadelphia	2.22	2.22	2.22	1.92
Tank plates, Chicago	2.10	2.10	2.10	2.10
Sheets, black, No. 24, Pittsburgh	3.10	3.05	3.10†	3.25†
Sheets, blue anl., No. 10, Pittsburgh	2.40	2.35	2.30	2.40
Sheets, galvanized, No. 24, Pittsburgh	3.95	3.90	4.30†	4.50†
Sheets, black, No. 24, Chicago	3.20	3.25	3.25†	3.45†
Sheets, blue anl., No. 10, Chicago	2.50	2.55	2.45	2.60
Sheets, galvanized, No. 24, Chicago	4.05	4.10	4.45†	4.70†
Wire nails, Pittsburgh	2.65	2.65	2.65	2.65
Wire nails, Chicago	2.70	2.70	2.70	2.70
Tin plate per base box, Pittsburgh	$5.50	5.50	5.50	5.50
†Based on No. 28 gage.				
OLD MATERIAL				
Heavy melting steel, Pittsburgh	17.00	17.00	17.75	19.50
Heavy melting steel, eastern Pa.	16.25	16.65	16.75	17.60
Heavy melting steel, Chicago	13.00	13.05	14.00	16.40
No. 1 wrought, eastern Pa.	17.00	17.00	17.25	18.75
No. 1 wrought, Chicago	14.00	14.50	14.75	17.70
Rails for rolling, Chicago	16.50	16.65	17.25	19.40

Composite Market Average

The Fourteen Leading Iron and Steel Products Included are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (Nov. 10, 1926)	$38.43
Last week (Nov. 3, 1926)	38.30
One month ago (October, 1926)	38.08
Three months ago (August, 1926)	37.61
One year ago (November, 1925)	38.73
Ten years ago (November, 1916)	46.77
Thirteen years ago (November, 1913)	24.02

Late News Flashes

Hear Export Screw Body is Approved

Washington, Nov. 9.—Federal trade commission is understood to have approved formation of the Export Screw association of the United States under the Webb-Pomerene act.

Chicago Plate Mills on Lighter Basis

Chicago, Nov. 9.—Decreased plate mill operation, reflecting the slack car building situation, is having its effect on steelworks operations. The ingot rate averages between 80 and 85 per cent.

Struthers Stack Ready for Campaign

Youngstown, O., Nov. 9.—The blast furnace stack of the Struthers Furnace Co. is ready to resume. The company has earned $150,000 net in eight months under Receiver H. W. Grant and in charge of W. C. Holzworth. All of the iron on its yard has been sold.

All Sparrows Point and Bethlehem Stacks In

New York, Nov. 9.—With the lighting of a blast furnace stack on basic iron, Nov. 6, Bethlehem Steel Co. has all six of its stacks at Sparrows Point, Md., in blast. Since Oct. 28 it has had six stacks active at Bethlehem, Pa.; since "C" stack has long been idle and may not again be operated it is not regarded as part of the capacity there.

Sheet Mill Average Down 10 Per Cent

Pittsburgh, Nov. 9.—Steelmaking is maintained at 75 to 80 per cent. Wire mills are averaging 50 per cent, tin plate 90, pipe 90 to 95, sheet 80, strip 60 and bolt and nut 60. American Sheet & Tin Plate Co. is maintaining its 92 per cent gait in tin plate. The sheet mill average is down 10 per cent. Carnegie Steel Co. has shut down its skelp mill at Farrell, Pa.

Mahoning Valley Steel Rate Down to 70

Youngstown, O., Nov. 9.—The steelmaking average for the Youngstown district is not over 70 per cent, with Steel corporation mills operating higher than independents. Thirty-one of the 53 independent open-hearths are active. Bar mill operations of independents average 60 per cent and of the Steel corporation 85. Pipe and skelp mills are unchanged at 85 per cent. Strip mills average 80 per cent.

Youngstown Sheet & Tube Co. announces it will start work next spring on 120 by-product coke ovens, probably Koppers, at Chicago.

A. M. Byers Co. is reported negotiating for the purchase of the American Puddler Iron Co. plant.

Current Rolled Steel Prices

PRICES, CENTS PER POUND, UNLESS OTHERWISE STATED

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS

4 x 4-inch base

Pittsburgh, open-hearth	$35.00
Pittsburgh, bessemer	35.00
Youngstown	35.00
Philadelphia	40.30
Chicago	35.00
Forging, Pittsburgh	40.00
Forging, Philadelphia	45.30

SHEET BARS

Pittsburgh	$36.00
Youngstown	36.00

SLABS

Pittsburgh	$35.00
Youngstown	35.00

WIRE RODS

Pittsburgh	45.00
Cleveland	45.00
Chicago	46.00

Standard extras, $5 for screw stock; $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

Grooved skelp	1.90c
Universal skelp, Pittsburgh	1.90c
Sheared skelp, Pittsburgh	1.90c

Structural Shapes

Pittsburgh	2.00c
Philadelphia	2.17c to 2.32c
New York	2.19c to 2.34c
Chicago	2.10c
Cleveland	2.19c
Birmingham	2.15c to 2.25c

Steel Plates

Pittsburgh	1.90c
Philadelphia	2.22c
New York	2.24c
Chicago	2.10c
Cleveland	2.09c
Birmingham	2.05c to 2.15c

Iron and Steel Bars

Pittsburgh, soft steel	2.00c to 2.10c
Pittsburgh, cold finishing	2.15c
Pittsburgh, forging quality	2.15c
Philadelphia, soft steel	2.32c to 2.42c
New York, soft steel	2.34c to 2.44c
Chicago, soft steel	2.10c
*Cleveland, soft steel	2.00c to 2.19c
Birmingham, soft steel	2.15c to 2.25c
San Francisco, soft steel	2.60c
Pittsburgh, refined iron	3.00c to 4.50c
Pittsburgh, reinforcing billet	2.00c to 2.10c
Youngstown, reinf. billet, base	1.90c to 2.00c
Chicago, rail steel	2.00c
Mill, rail steel	1.80c
Philadelphia, common iron	2.22c to 2.32c
New York, common iron	2.24c to 2.34c
Chicago, common iron	2.00c

*The 2.00c price applies to a limited range of forms and sizes.

Hoops, Bands, Strips

Hoops, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh over 6 in.	2.30c
Hot rolled strip steel, Pittsburgh, stamping quality, over 6 in.	2.30c
Hot rolled strip steel, Chicago	2.50c to 2.60c
Bands, Chicago, under 6 inches	2.60c
Bands, Chicago, 6 in. and over	2.50c
Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100-inch and heavier, base, Pittsburgh	3.25c to 3.60c
Worcester Mass	3.90c
Chicago	3.80c to 4.05c

Cold Finished Steel

Cold finished steel bars, drawn, or rolled, Pittsburgh, Chicago carloads	2.40c
Less carload	2.50c to 2.65c
Steel shafting turned and polished Pittsburgh, Chicago	2.60c

Screw stock base Cleveland $1 higher than Pittsburgh and Chicago.

Hot Rolled Alloy Steel

Pittsburgh or Chicago

S. A. E. Series—	
2300 (3½ per cent nickel)	4.40c to 4.50c
3100 (Nickel chromium)	3.40c to 3.50c
6100 (Chrome vanadium)	4.25c to 4.30c
6100 (Chrome vanad. spring)	3.35c
9250 Silico-mang. spring)	3.25c

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-h'th rails, mill	43.00
Relaying rails, St. Louis	24.00 to 31.00
Relaying rails, Pittsburgh	23.00 to 25.00
Light rails, 25 to 45, mills	36.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.80c to 2.90c
Spikes, small railroad, 7-16-inch and smaller, Pitts	2.90c to 3.00c
Spikes, boat and barge, Pitts.	3.10c
Spikes, railroad, Chicago	2.90c
Track bolts, Pitts. standard	3.90c to 4.25c
Track bolts, Chicago	3.90c
Tie plates, Chicago	2.35c
Tie plates, Pittsburgh	2.35c

Wire Products

To Jobbers in Carloads

Dealers 5 cents per 100 pounds extra F.o.b. Cleveland and Pittsburgh base.

Wire nails	2.65c
Galvanized nails smaller than 1-inch	4.90c
Galv'd nails, 1-inch and over	4.65c
Plain wire	2.50c
Annealed wire	2.65c
Galvanized wire No. 9 gage	3.10c
Barbed wire, painted	3.10c
Barbed wire, galvanized	3.35c
Polished staples	3.10c
Galvanized staples	3.35c

Coated nails, 100 pound kegs, subject to card of extras Sept. 1, 1926, over regular wire nail base.

Woven wire fencing (retailers) 12½ gage, 26-in. high 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts	$20.03

Joliet, DeKalb and Waukegan, Ill., and Anderson, Ind., prices $1 per ton over Cleveland-Pittsburgh base on products made there; Duluth $2 higher, Worcester, Mass., and Fairfield, Ala., $3 higher.

Sheets

SHEET MILL BLACK

No. 24, Pittsburgh, base	3.10c
No. 24, Philadelphia, delivered	3.42c
No. 24, Gary, Indiana Harbor	3.20c
No. 24, Chicago, delivered	3.25c

TIN MILL, BLACK

No. 28, Pittsburgh	3.25c
No. 28, Gary base	3.35c

GALVANIZED

No. 24, Pittsburgh, base	3.95c
No. 24, Philadelphia, delivered	4.27c
No. 24, Gary, Indiana Harbor	4.05c
No. 24, Chicago, delivered	4.10c

BLUE ANNEALED

No. 10, Pittsburgh, base	2.40c
No. 10, Philadelphia, delivered	2.72c
No. 10, Gary, Indiana Harbor	2.50c
No. 10, Chicago, delivered	2.55c

AUTOMOBILE SHEETS

No. 20, Pittsburgh, base	4.25c

Tin and Terne Plate

Prices per 100-pound box, Pittsburgh

*Tin plate, coke base	$5.50

Gary, Ind., base 10 cents higher.

Long ternes, No. 24, base	4.30

*This price is subject to quantity differentials established by individual regulations.

Iron and Steel Pipe

Base Discounts Pittsburgh and Lorain, O. to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel	62	50½
1 to 1½-inch, butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less. Chicago delivered 2½ points less.

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	68⅓
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled 3¼ to 3½-inch	46 off

Additional discounts of seven 5 per cents being allowed for carloads and six 5 per cents for less-carload, on lap welded steel. On seamless hot rolled several additional 5 per cents are allowed.

Chain, Piling, Cut Nails

Chain, 1-in. proof coil, Pitts.	6.00c
Sheet piling base, Pittsburgh	2.25c to 2.30c
Cut nails, c. l., f.o.b. mills	2.80c

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Four-inch, Chicago	$51.20 to 52.20
Six-inch to 24-inch, Chicago	47.20 to 49.20
Over 24-inch, Chicago	45.20
Four-inch, Birmingham	43.00 to 44.00
Six-inch and over, Birming'm	39.00 to 40.00
Four-inch, New York	56.50 to 57.60
Six-inch and over, New York	51.50 to 52.60
Standard fittings, Birmingham base	$110.00

6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $5 higher than Class B

Nuts and Bolts

F.o.b. basing points, Pittsburgh, Cleveland, Birmingham and Chicago.

Hot pressed square tapped or blank	$4.00 off list
Hot pressed hexagon tapped or blank	$4.40 off list
Cold punched square or hexagon blank	$4.10 off list
Cold punched square or hexagon tapped or blank	$4.10 off list
Cold punched U. S. S. semifinished hexagon nuts ⅝-inch and larger	75, 10 and 5 off
Cold punched U. S. S. semifinished hexagon nuts 9/16-inch and smaller	80, 10 and 5 off
Cold finished S. A. E. semifinished ⅝-inch and larger	75, 10, 10 and 5 off
Cold finished S. A. E. semifinished 9/16-inch and smaller	80, 10, 10 and 5 off

CARRIAGE BOLTS

(⅜ x 6-inch, smaller and shorter)

Rolled thread	50, 10 and 10 off
Cut thread (all sizes)	50 and 10 off
Eagle carriage bolts (Eagle list)	65 and 10 off

MACHINE BOLTS

(⅜ x 4-inch, hot pressed nuts)

Rolled thread	60 and 10 off
Cut thread	50, 10 and 10 off

(All sizes cold punched nuts)

Cut thread	45 10 and 5 off
Lag screws	60, 10 and 10 off
Plow bolts Nos. 3 and 7 heads	50 and 10 off
All other standard heads	50 and 10 off plus 20 per cent
Tap bolts	30 off
Bolt ends with hot pressed nuts	50, 10 and 10 off
Bolt ends with cold punched nuts	45, 10 and 5 off
Blank bolts	50, 10 and 10 off
Rough stud bolts with nuts (250 pieces or more of a size)	40 and 10 off

Stove bolts, 80, 10 and 5 off in bulk. In packages, 80, 10 and 5 plus 2½ off.

Tire bolts	60 and 5 off

SEMIFINISHED CASTELLATED AND SLOTTED NUTS

Per 1000, f.o.b. producer's plant, freight allowed

	S.A.E. Castellated	U.S.S. Slotted
¼	$ 4.40	$ 4.40
5/16	5.15	5.15
⅜	6.20	6.60
7/16	7.90	9.00
½	10.10	10.50
9/16	13.80	14.20
⅝	17.00	17.30
¾	28.50	24.00
⅞	36.00	36.00
1	55.50	58.00
1⅛	89.00	89.00
1¼	126.00	131.00
1⅜	183.50	183.50
1½	210.00	210.00

Larger sizes—Prices on application

HEXAGON CAP SCREWS

Milled	80 and 10 off
Upset	80, 10 and 10 off

SQUARE HEAD SET SCREWS

Milled	80 and 5 off
Upset	80, 10 and 5 off

Rivets

Structural rivets, carloads, Pittsburgh and Cleveland	2.50c to 2.60c
Structural rivets, carloads, Chicago	2.60c to 2.75c

**Rivets, 7/16-inch and smaller, Pittsburgh, Cleveland, 70, 10 and 5 to 70 and 10 off.

**Rivets, 7/16-inch and smaller, Chicago 70, 10 and 5 to 70 and 10 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Washers

Wrought c.l., Chicago dist.	$6.40 to 6.50 off
Wrought c.l., Pitts. dist	6.75 off
Lock washers, f.o.b. factory	85 to 90 off

Pig Iron

Stronger Prices Accompany Buying Movement for First Quarter—Week's Sales More Than 200,000 Tons

SALES of pig iron continue to mount as prices advance. The total for the week is estimated at more than 200,000 tons. Furnace interests with headquarters at Cleveland booked 90,000 tons; Buffalo companies report 50,000 tons; in New York district 15,000 tons. At St. Louis the amount was 32,000 tons, including 15,000 tons placed by a radiator company. Southern Ohio, Chicago, New England, and Philadelphia report active markets. Valley makers who were quoting $19.50, base, a week ago now are firm at $20, and this represents the going market. Cleveland producers have advanced their quotations $1, now asking $21 to $21.50, delivered in the local area; other lake furnaces are up 50 cents to $20 to $21, and southern Ohio advances to $22.50 base.

PITTSBURGH, Nov. 9.—The pig iron market definitely began late in the week to show effects of higher fuel costs. Sales now are bringing higher prices. Several lots of foundry iron, some of them involving 400 tons, were sold at $20, base, valley. One sale of 200 tons of No. 2X iron brought $20.50, valley. A few sales of malleable, usually single carloads to 200 tons, also brought $20, valley One merchant producer reports a few sales of bessemer iron at $20, valley. Another sold 300 tons at $20.50, which may be the minimum from now on. No activity is noted in the market for basic iron. The price was $18 before the general market advanced, and producers now claim they will not sell below $19.50. That price is quoted on a few inquiries pending, one involving 5000 tons. Consumers are manifesting an attitude of indifference. No inquiries are appearing here, in contrast with other districts where purchasing for this quarter and first quarter is heavy. One Buffalo interest sold 15,000 tons of foundry iron in one day last week.

The Stewart Furnace Co. will blow in its stack at Sharon Dec. 1.

Philadelphia, Nov. 9.—With comfortable order books, and the coke market uncertain, eastern furnaces are not soliciting pig iron business, and either take only part of consumers' requirements or refuse to take any. The minimum price on foundry iron now is $22.50, base furnace. Two thousand tons of low phosphorus iron was sold in the past week. Copper free low phosphorus was sold at an advance of $1 in some instances. Moderate tonnages of basic were sold at $22, furnace. Several hundred tons of European foundry iron was placed in this district at $22.50, duty paid, tidewater. Virginia makers sold approximately 2500 tons of foundry iron, and $22.50, base, furnace, now is minimum.

Boston, Nov. 9.—A pig iron buying movement for first quarter is getting under way. In New England sales the past week were nearly double those in the preceding week. Except two 1000-ton lots individual sales are small. Prices have an upward tendency. A Buffalo furnace advanced $1 to $20, base, or $24.91, delivered New England. A good tonnage has been taken by another Buffalo seller at $19, base. The Everett, Mass., furnace quotes $21.50 base, $22 for No. 2X and $22.50 for No. 1X.

New York, Nov. 9.—Sales of pig iron in this territory in the past week are estimated to total 15,000 tons. New inquiry is small. Buffalo furnaces have been the most active competitors for business here. They have continued to sell foundry iron for shipment through the first quarter of 1927, and in some instances through the first half, at $19, base, Buffalo, plus 50-cent silicon differentials. Two Buffalo makers have advanced prices, one holding at $20, base, Buffalo, for this territory, and the other at $21. Two others still quote $19 for this territory. Eastern Pennsylvania furnaces have abandoned all prices below $22.50, base, furnace, and none is anxious to book business at this time. Foreign iron is a negligible factor in the market. Prices of German iron for first quarter are higher than importers feel they can get from consumers here. Some Dutch iron continues to be sold at high prices, the 2.75 to 3.25 silicon grade bringing $23.25, duty paid tidewater. Several inquiries ask prices on American low phosphorus iron for shipment to England. This is a reversal of the condition prior to the British coal strike when English low phosphorus was being sold in this country.

Buffalo, Nov. 9.—Pig iron sales by Buffalo furnaces during the past ten days amounted to 50,000 tons. One maker sold more iron in the week ending Nov. 6 than in any corresponding period this year. Inquiries pending total 15,000 to 20,000 tons. Some first half business has been taken. One maker has advanced to $21 base, Buffalo, for foundry and malleable for local delivery, and $20 outside. Others will sell at $20, Buffalo, and $19 outside. There has been a reduction in output by one stack in this district, and another is in early prospect.

Cleveland, Nov. 9.—Larger sales and higher prices than a week ago feature the pig iron market. Furnace interests with headquarters in Cleveland report sales for the past week collectively amounting to 90,000 tons, compared with 50,000 tons in the week preceding. Some business was booked at prices prevailing just prior to the recent advance. Many inquiries for 500 to 4000-ton lots that were held in abeyance by sellers for two weeks were closed, mainly for first quarter. Michigan melters figured substantially in the purchasing; a Michigan melter placed 4000 tons with a lake furnace. Sales were made to automotive, radiator and stove manufacturers. Orders from Cleveland

(*Concluded on Page* 1267)

Pig Iron Prices

Prices per gross ton

Bessemer, valley	$20.00 to 20.50
Bessemer, Pittsburgh	21.76 to 22.26
Basic, valley	18.50 to 19.50
Basic, Pittsburgh	20.26 to 21.26
Basic, Buffalo	19.00 to 19.50
Basic, del., eastern Pa.	22.00 to 23.00
Malleable, valley	20.00
Malleable, Pittsburgh	21.76
Malleable, del., Cleveland	21.00 to 21.50
Malleable, Chicago	21.00
Malleable, Buffalo	19.00 to 20.00
Malleable, del., eastern, Pa.	23.50 to 24.00
No. 1X, Eastern del., Phila	24.26 to 24.63
No. 1X, Buffalo	20.50 to 21.00
No. 1 foundry, Chicago	21.50
No. 2 foundry, valley	20.00
No. 2 foundry, Pittsburgh	21.76
No. 2 foundry, Buffalo	19.00 to 20.00
No. 2 foundry, Boston	21.50 to 22.50
No. 2 foundry, Chicago	21.00
No. 2 foundry, Granite City	21.00 to 21.50
No. 2 foundry, Ironton	20.00 to 20.50
No. 2 foundry, del., Cleveland	21.00 to 21.50
No. 2 foundry, del., Phila.	23.26 to 23.63
No. 2 foundry, N. J., tidewater	23.89 to 24.26
No. 2X, eastern del., Phila.	23.76 to 24.13
No. 2X east N. J., tidewater	24.39 to 24.76
No. 2X, foundry, Buffalo	20.00 to 20.50
No. 2X, eastern del., Boston	25.65 to 26.15
No. 2X, Buffalo, del., Boston	24.41 to 25.41
Continental foundry f.o.b. Boston	21.50 to 22.50
No. 2 Alabama, Birmingham	20.00
No. 2 Alabama, del. Cincinnati	23.69
No. 2 Tenn., Birmingham	20.50
No. 2 Tenn., del. Cincinnati	24.19
No. 2 Alabama, del. Philadelphia	26.01
No. 2 Alabama, del. Chicago	26.01
No. 2 Alabama, del Chicago (barge and rail)	25.18
No. 2 Alabama, del. Boston (rail and water)	26.81
No. 2 Alabama, del. Cleveland	26.01
No. 2 Alabama, del. St. Louis	24.42
No. 2X Virginia	23.00
No. 2X, Virginia, Phila.	28.17
No. 2X, Virginia, del. Jers. City	28.54
No. 2X, Virginia, del., Boston	28.92
Gray forge, eastern Pa.	22.00 to 23.00
Gray forge, val. del. Pitts.	21.26
Low phos., standard, valley	29.00
Low phos., standard, Phila.	25.76 to 26.76
Low phos., Lebanon	25.00
Charcoal, Birmingham	29.00 to 30.00
Charcoal, Superior, Chicago	27.04

Silvery iron Jackson county, Ohio furnace, 5 per cent $25.50; 6 per cent $26.50; 7 per cent $27.50; 8 per cent $28.50; 9 per cent $30.00; 10 per cent $32.00; 11 per cent $34.00; 12 per cent $36.00; 13 per cent $38.00; and 14 per cent $40.00.

Bessemer ferrosilicon, Jackson county, Ohio, furnace, 10 per cent $34.00; 11 per cent $36.00; 12 per cent $38.00; 13 per cent $40.00; 14 per cent $42.00; 15 per cent $45.00; 16 per cent $47.00; 17 per cent $49.50.

*Duty paid, delivered Philadelphia consumers. Prices are f.o.b. furnace except where stated otherwise.

Coke

Connellsville Market Steadier—Furnace Demand Quiet—Some Adjustments Being Made

THE market for beehive coke is steadier, this being the first week since the acceleration in coal demand that Connellsville prices have failed to show an increase. Furnaces are paying the higher prices through operation of the wage clause in contracts; new buying is negligible, and interest in first quarter is lacking. More producers are turning their attention to coal.

Pittsburgh, Nov. 9.—Beehive coke demand has simmered down to spasmodic purchases for nonmetallurgical uses in five to 15 carloads at a time. The price usually is $5.50 to $6, although 750 tons was offered here yesterday at $5. All operating blast furnaces are under contract to pay higher figures since Nov. 1, due to wage increases. They are not inquiring for first quarter. Spot market supplies are scarce due to a tendency to concentrate on coal which is more remunerative than coke. The Claire furnace has banked for a short period, its coke source putting out its ovens and devoting attention to coal. When an agreement for 50,000 tons monthly with a local steel interest expires Dec. 1, this production likewise will be devoted to coal. No coke is likely to press the market for some time. While coal generally lost some of its buoyancy during the week enough demand still is originating abroad and in this country to support present high producing levels without weakening the price structure. Some surpluses here and there develop concessions of 25 to 50 cents from last week levels, but most of the declines are in slack and steam coal. Slack is selling at $2.50 and $2.60, while gas slack is around $3. Mine run and lump coal are practically the same. Heating coke demand is increasing and $4.50 to $5 are being paid. Foundry coke inquiries develop from time to time. Small lots are bringing $6 to $7.

Production of coke in the Connellsville region for the week ended Oct. 30 was 145,370 tons, against 143,550 tons in the preceding week, according to the *Conellesville Courier*.

Boston, Nov. 9.—Foundry coke has been advanced to $13, delivered, New England. Spot tonnage is scarce. Sales have been reported as high as $14, delivered. Foundries are buying in good volume.

New York, Nov. 9.—Scattering sales of spot beehive coke have been made here. Prices ranged from $7 to $7.50, Connellsville, for foundry and $5.75 to $6.25 for furnace. While offerings are limited, there seems to be no scarcity in this territory. On beehive foundry coke, contract prices have been advanced $1.25 a ton, based on the wage clause in contracts. Prices on by-product coke in this territory are unchanged and the delivered figures at Newark and other northern New Jersey consuming points, range from $10.59 to $11.77, depending on the freight rate.

Detroit, Nov. 9.—The recent increase of $1 in by-product coke has not had a noticeable effect on sales. Foundries are buying hand-to-mouth, demand is normal. The coal situation remains unsettled. There is no shortage, although some grades are not being received.

Cincinnati, Nov. 9.—Higher coke prices are being established in this district. Leading brands of New River foundry fuel are bringing $9, ovens, while the furnace grade is quoted $6.50 to $7, ovens. Wise county furnace coke ranges from $5.50 to $6.50 ovens, and foundry $6 to $7. Portsmouth By-Product Coke Co. has advanced the price of foundry 50 cents a ton. This marks the second advance of 50 cents since the first of the month and brings the market to $8, ovens, for November delivery. Ashland By-Product Coke Co. has announced it will adhere to $7.50, ovens, for the present.

St. Louis, Nov. 9.—Demand for all grades of coke continues active and prices are strong. Premiums have been offered for prompt delivery, but such inducements have not been successful as a rule as all avaliable supplies have been covered. The leading east side by-product interest is out of the market for all grades. Thus far the ovens have been able to get regular supplies of coal from the East, but the growing shortage of cars is causing some apprehension. In the adjacent Illinois coal fields activities are at a higher rate than in several years. New mines are being opened, and there is sharp competition for labor. Some Illinois coal has been purchased for export.

Birmingham, Ala., Nov. 9.—Further strength is noted in foundry coke. Independent producers in Alabama are finding a ready demand for their full output. All by-product coke ovens are operating at capacity. Quotations are firm at about $5.50 for the foundry grade. Shipments outside of the district are good.

Coke Prices

Beehive, Ovens

Prices per net ton

Connellsville furnace	$5.00 to 6.00
Connellsville foundry	6.00 to 7.00
New River foundry	9.00
New River furnace	6.50 to 7.00
Wise county furnace	5.50 to 6.50
Wise county foundry	6.00 to 7.00
Alabama foundry	4.50 to 5.50

By-Product

Foundry, Newark, N. J.; del.	10.59 to 11.77
Foundry, Chicago, ovens	9.75
Foundry, New England, del.	13.00
Foundry, St. Louis	10.00
Foundry, Granite City, Ill.	10.00
Foundry, Birmingham	5.50 to 6.00
Foundry Indianapolis, del.	10.25
Foundry, Ashland, Ky.	7.50
Foundry, Portsmouth, O.	8.00

Ferroalloys

Negotiating for First Quarter—Ferrosilicon Steady—Spiegeleisen Higher

Pittsburgh, Nov. 9.—Prices of ferroalloys for next quarter or next half are scheduled to be announced this week. In the meantime, the leading domestic producer is adhering to its nominal price of $100, seaboard, for this year. Books will be opened tomorrow on 50 per cent ferrosilicon for 1927 and contracts probably will be closed at an unchanged price of $85. This will mean a continuance of the open market figure of $87.50 for single carloads. Spiegeleisen has been advanced $2, the 19 to 21 per cent material going to $35 to $36, and a sale of 100 tons at the $35 figure is noted. The 16 to 19 per cent grade is quoted at $34 to $35, with no material available.

New York, Nov. 9.—Negotiations for 1927 ferromanganese requirements are under way and it is expected that the market on 1927 requirements will be developed within the coming week. So far producers have not indicated the price at which they will seel. The coke market has created some uncertainty. The price on new business for 1926 consumption continues $100, duty paid tidewater. Several carloads were sold during the week for spot shipment.

Spiegeleisen requirements for next year also are being considered. Producing interests have been unable to set a price on contract renewals because of the uncertainty of fuel. It is possible that contracts may be renewed with a provision calling for modifications in price of spiegeleisen to correspond with fluctuations in coke.

Ferroalloy Prices

†Ferromanganese 78 to 82 per cent, tidewater, or furnace first hand resales	$100.00 to 105.00
Ferromanganese delivered Pittsburgh	104.79 to 109.79
Spiegeleisen 19 to 21 per cent domestic furnace or tidewater	35.00 to 36.00
Ferrosilicon, 50 per cent freight allowed	85.00 to 87.50
Ferrotungsten standard, per pound contained	1.00 to 1.05
Ferrochrome, 60 to 70 chromium, 6 to 8 carbon, cents per pound contained, delivered	11.00 to 11.50
Ferrovanadium, 30 to 40 per cent per pound estimated, according to analysis	3.25 to 4.00
Ferro-carbon-titanium, car lots, producer's plant, net ton	200.00
Ferrophosphorus, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18 per cent material)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23 to 25 per cent, f.o.b. Anniston, Ala., (24 per cent materials)	122.50

†Duty paid.

Plates

Bookings Continue at October Rate—Good Car, Barge, Ship Repairs in Sight—Prices Firm

PITTSBURGH and eastern platemakers report bookings at the same rate as in October. The latter expect to take large orders this month for car repair plates. Barge demands are the principal prospects in the Pittsburgh district, while at Chicago 20,000 tons are on inquiry for tanks. Good demand for winter ship repair work at Great Lakes yards is assured. Plate prices are firm.

PLATE PRICES, PAGE 1252

New York, Nov. 9.—Some of the larger steelmakers expect to book considerable car plate tonnage before the end of this month, and believe their November plate bookings will show up unusually well. Other business continues fairly good. Current bookings appear to be at about the same rate as in October and some sellers report improvement. The price is firm at 1.90c, base, Pittsburgh equivalent to 2.24c, delivered New York. Several small orders for ship repair plates, each involving less than 100 tons, were taken recently for shipment to British ports.

Boston, Nov. 9.—Buying pressure for plates has slackened, but prices remain firm at 1.90c, Pittsburgh, or 2.265c delivered. A fair amount of work is in prospect.

Pittsburgh, Nov. 9.—Demand for tank plates is fairly heavy. Orders are numerous for 35, 40, 50 and 75-ton lots, and two or three larger tonnages were placed. Fabricators are specifying on a par with the October rate. Some oil tank inquiries are developing in Texas and Oklahoma. A nearby barge builder reports a good tentative demand for barges. A recent survey indicates that early in 1927 manufacturers located on the Ohio, Monongahela and Allegheny rivers will buy one, two, six or 12 barges each. The plate price is steady at 1.90c, base, Pittsburgh.

Cleveland, Nov. 9.—Demand for plates thus far in November has developed little change from the October average and is not much less than the September level. The outlook is that an unusually heavy tonnage will be purchased for Great Lakes ship repairs this winter. The Lima Locomotive works, Lima, O., is taking prices on about 2000 tons, following receipt of a Pennsylvania railroad inquiry for 75 locomotives. Buyers are doing more "shopping" but no weakness in the 1.90c, Pittsburgh, or 2.09c, Cleveland, price on plates is reported.

Chicago, Nov. 9.—Inquiry for oil tankage maintains a consistent demand for steel plates in the absence of car building. Tankmakers in this district and in other parts of the West are well booked. Inquiry for plates from tank sources calls for approximately 20,000 tons. Tankage is above the average for recent years, but bookings for structural plates are not up to normal. Plate mill operations in this district have been declining, lacking the support of car building activity.

CONTRACTS PLACED

15,000 tons, 700 tank cars, 10,000-gallon capacity, for Phillips Petroleum Corp., to Standard Tank Car Co., Sharon, Pa.; steel award not formally announced.
1100 tons, pipe line, Vancouver, B. C., to Vancouver Engineering Co.
500 tons, pontoon pipe for various West Coast interests, to Pacific Coast Engineering Co.

CONTRACTS PENDING

300 tons, 15-ton derrick boat for United States engineers, Washington; the Charleston Dry Dock & Machinery Co., Charleston, S. C., low bidder.
300 tons, diesel engine stern wheel boat for Mississippi river commission, Memphis, Tenn.; Dravo Contracting Co., Neville Island, Pittsburgh, low bidder.

Reopens Foreign Iron Rate Case

Washington, Nov. 9.—Interstate commerce commission has announced it has reopened I & S docket No. 2653 dealing with rates on imported iron and steel from Gulf ports to interstate destinations after considering the petitions filed by the Kansas City, Mo., and Kansas City, Kans., chambers of commerce and various iron and steel interests for a review of the record.

Announcement has been made also by the commission that it has discontinued I & S docket No. 2741 relative to the rates on iron and steel articles from western points to Louisiana points via Mississippi-Warrior service.

Semifinished

Sheet Bar, Billet and Slab Prices Likely to Be Continued for First Quarter

PRICES of sheet bars, billets and slabs which have remained at practically their respective levels since spring are likely to be reaffirmed for first quarter, according to the general impression in the trade. Definite statements by producers are expected this week. Sheet bars continue quotable at $36 and standard billets and slabs at $35. Current demand is quiet.

SEMIFINISHED STEEL PRICES, PAGE 1252

Pittsburgh, Nov. 9.—Demand for semifinished steel is quiet, except for occasional specifications on billets, slabs and sheet bars. Some billet orders have been placed by strip steel manufacturers, and slab orders have come from makers of blue annealed sheets. The sheet bar specifying rate has decreased due to reduced selling of sheets. The general belief is that $35 on billets and slabs, and $36 on sheet bars will prevail for another quarter. Forging billet specifications are less active on $40 contracts although some manufacturers of oil well tools maintain a steady demand. Wire rods are quoted at $45, with occasional orders. Skelp is inactive at 1.90c, except for specifications from tube makers. A decrease in wheel skelp orders is noted. One or two export inquiries are pending.

Youngstown, O., Nov. 9.—No new demand for semifinished material has developed in this district. Sheetmakers have sufficient semifinished tonnage under contract to cover sheet mill schedules for the remainder of this quarter. Specifications against these are being released promptly although signs of a slight decline in the volume is in evidence. Sheet bars are quoted at $36, Youngstown, and standard slabs and billets $35, Youngstown.

Philadelphia, Nov. 9.—Several small tonnages of billets were placed in the week at $35, base, Pittsburgh, for rerolling quality, and $40 for forging.

Merger Case Indefinite

Washington, Nov. 9.—Not until the New York hearings have been concluded will the federal trade commission take testimony here in its case against Bethlehem Steel Corp. over absorption of the Lackawanna and Midvale companies. It is thought that the sessions at New York will be resumed in several weeks.

Electrolytic iron is known to have been manufacturered on a laboratory scale 80 years ago. In 1860 the metal was employed for plating copper engravings of bank notes at the imperial mint at Petrograd, Russia.

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross Tons Delivered to Consumer

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	13.00 to 14.00
Boston (dealers)	11.00 to 11.50
Buffalo, No. 1	17.25 to 17.75
Buffalo, No. 2	16.00 to 16.50
Chicago	13.00 to 13.50
Cincinnati (dealers)	12.75 to 13.50
Cleveland, No. 1	15.00 to 15.50
Cleveland, No. 2	14.00 to 14.50
Detroit	12.00 to 12.50
Eastern Pennsylvania	16.00 to 16.50
Bethlehem delivery	15.50 to 16.00
New York (dealers) (yard)	10.00 to 10.50
Pittsburgh No. 1	17.50 to 18.00
Pittsburgh No. 2	16.50 to 17.00
St. Louis	13.00 to 13.50
Valleys, No. 1	16.00 to 16.50

COMPRESSED SHEETS

Buffalo	14.75 to 15.25
Chicago	11.50 to 12.00
Cleveland	13.00 to 14.00
Detroit	10.25 to 10.75
Pittsburgh	15.50 to 16.00
Valleys	15.00 to 15.50

BUNDLED SHEETS

Buffalo	11.00 to 11.50
Cincinnati (dealers)	9.50 to 10.00
Cleveland	12.50 to 13.00
Eastern Pennsylvania	13.00 to 13.50
Pittsburgh	14.50 to 15.00
St. Louis	8.00 to 8.50

SHEET CLIPPINGS, LOOSE

Chicago	8.25 to 8.75
Cincinnati	6.50 to 7.00
Detroit	6.25 to 6.75
St. Louis	7.00 to 7.50

STEEL RAILS, SHORT

Birmingham	13.00 to 14.00
Buffalo	17.25 to 17.75
Chicago	16.75 to 17.00
Cincinnati (dealers)	17.50 to 18.00
Cleveland (over 6 ft.)	14.75 to 15.00
Detroit	15.00 to 15.50
St. Louis	16.50 to 17.00

STOVE PLATE

Birmingham	14.00 to 15.00
Boston (consumers)	13.50 to 14.00
Buffalo	15.00 to 15.50
Chicago (net)	14.00 to 14.50
Cincinnati (dealers) (net)	9.00 to 9.50
Cleveland	13.00 to 13.50
Detroit (net tons)	12.00 to 12.50
Eastern Pennsylvania	13.00
New York (dealers)	10.00 to 11.25
Pittsburgh	13.00 to 13.50
St. Louis	14.75 to 15.25

LOW PHOSPHORUS

Buffalo, billet and bloom crops	18.50 to 19.00
Cincinnati (dealers)	16.50 to 17.00
Eastern Pennsylvania	20.00 to 21.00
Pitts. billet and bloom crops	20.50 to 21.50
Cleveland, billet and bloom crops	19.00 to 19.50

SHOVELING STEEL

Chicago	13.00 to 13.25
Pittsburgh	12.50 to 13.00
St. Louis	13.00 to 13.50

KNUCKLES, COUPLERS, SPRINGS

Chicago	15.50 to 16.00
Eastern Pennsylvania	17.00 to 18.00
Pittsburgh	18.50 to 19.00
St. Louis	14.00 to 14.50

FROGS, SWITCHES, GUARDS

Chicago	15.00 to 15.50
Eastern Pennsylvania	12.00 to 12.50
St. Louis	14.00 to 14.50

ANGLE BARS—STEEL

Buffalo	16.50 to 17.00
Chicago	15.00 to 15.50
St. Louis	13.75 to 14.25

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	11.00 to 12.00
Boston (dealers)	12.00 to 12.50
Buffalo, No. 1	13.50 to 14.00
Buffalo, No. 2	15.50 to 16.00
Chicago, No. 1	14.00 to 14.25
Chicago, No. 2	13.00 to 13.50
Cincinnati, No. 1 (dealers)	11.50 to 12.00
Cleveland, No. 1	12.50 to 13.00
Eastern Pennsylvania	17.00 to 17.50
New York, No. 1 (dealers)	14.50 to 15.00
Pittsburgh, No. 1	13.50 to 14.00
Pittsburgh, No. 2	17.00 to 17.50
St. Louis, No. 1	13.00 to 13.50
St. Louis, No. 2	13.00 to 13.50

WROUGHT PIPE

Boston (dealers)	9.50 to 10.00
Eastern Pennsylvania	14.00 to 14.50
Buffalo	15.00 to 15.50
New York (dealers)	9.25 to 9.75

YARD WROUGHT

Boston	12.00 to 12.50
Eastern Pennsylvania	13.50 to 14.50

BUSHELING

Buffalo	16.00 to 16.50
Chicago, No. 1	11.00 to 11.50
Chicago, No. 2	8.50 to 9.00
Cincinnati, No. 1 (dealers)	8.00 to 8.50
Cleveland No. 1	11.75 to 12.00
Cleveland, No. 2	11.50 to 11.75
Pittsburgh, No. 1	14.50 to 15.00
St. Louis, No. 1	11.50 to 12.00

MACHINE SHOP TURNINGS

Birmingham	8.00 to 8.50
Boston	8.00 to 8.50
Buffalo	10.75 to 11.25
Chicago	7.25 to 7.75
Cincinnati (dealers)	6.00 to 6.50
Cleveland	11.00 to 11.50
Detroit	8.25 to 8.75
Eastern Pennsylvania	13.00 to 13.50
New York (dealers)	9.25 to 9.75
Pittsburgh	12.00 to 12.50
St. Louis	7.00 to 7.50

CAST IRON BORINGS

Birmingham (chemical)	15.50 to 16.50
Birmingham (plain)	8.00 to 8.50
Boston (chemical)	10.50 to 11.00
Boston (dealers)	8.50 to 9.00
Buffalo	12.00 to 12.50
Chicago	9.00 to 9.50
Cincinnati (dealers)	6.50 to 7.00
Cleveland	11.75 to 12.00
Detroit	9.00 to 9.50
Eastern Pennsylvania	13.00 to 13.50
Eastern Pennsylvania (chem.)	15.50 to 16.50
New York (dealers)	9.25 to 9.75
Pittsburgh	12.50 to 13.00
St. Louis	10.50 to 11.00
Valleys	13.50

MIXED BORINGS AND TURNINGS

For blast furnace use

Boston (dealers)	8.00 to 8.50
Buffalo	12.00 to 12.50
Cincinnati (dealers)	6.00 to 6.50
Cleveland	11.75 to 12.00
Detroit	8.50 to 9.00
Eastern Pennsylvania	12.00 to 13.00
New York (dealers)	9.25 to 9.75
Pittsburgh	12.50 to 13.00

PIPES AND FLUES

Chicago net)	8.25 to 8.75
Cincinnati (dealers)	8.00 to 8.50
St. Louis	10.00 to 10.50

RAILROAD GRATE BARS

Buffalo	13.00 to 13.50
Chicago (net)	13.25 to 13.75
Cleveland	13.50 to 13.75
Eastern Pennsylvania	13.00
New York (dealers)	11.25 to 12.00
St. Louis	14.75 to 15.00

FORGE FLASHINGS

Boston (dealers)	8.50 to 9.00
Buffalo	14.00 to 14.50
Chicago	9.25 to 9.75
Cleveland (over 10 in.)	12.50 to 13.00
Cleveland (under 10 in.)	12.50 to 13.00
Detroit	8.25 to 8.75
Pittsburgh	13.00 to 13.50

FORGE SCRAP

Boston (dealers)	8.50 to 9.00
Chicago	17.00 to 17.50
Eastern Pennsylvania	13.50 to 14.00

ARCH BARS AND TRANSOMS

Chicago (net)	19.00 to 19.25
St. Louis	20.50 to 21.00

Iron Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	9.50 to 10.00
Buffalo	13.50 to 14.00
Chicago	12.00 to 12.50
Cleveland	12.50 to 13.00
Eastern Pennsylvania	14.00 to 14.50
Pittsburgh	15.00 to 15.50
St. Louis	10.50 to 11.00

STEEL CAR AXLES

Birmingham	17.00 to 18.00
Boston (shipping point)	18.00 to 18.50
Buffalo	16.50 to 17.00
Chicago	18.50 to 19.00
Cleveland	16.00 to 16.50
Eastern Pennsylvania	22.00 to 23.00
Pittsburgh	20.00 to 21.00
St. Louis	19.50 to 20.00

SHAFTING

Boston (shipping point)	16.00 to 17.00
Chicago	19.75 to 20.00
Eastern Pennsylvania	21.00 to 22.00
New York (dealers)	17.50 to 18.00
St. Louis	18.00 to 18.50

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	16.00 to 17.00
Boston (consumers)	17.00 to 17.50
Buffalo, iron	16.50 to 17.00
Buffalo, steel	17.00 to 17.50
Chicago, iron	14.25 to 14.75
Chicago, steel	16.25 to 16.75
Cincinnati	12.00 to 12.50
Eastern Pennsylvania	17.00 to 17.50
New York iron (dealers)	12.50 to 13.50
Pittsburgh, iron	16.00 to 16.50
Pittsburgh, steel	18.50 to 19.00
St. Louis, iron	14.00 to 14.50
St. Louis, steel	17.00 to 17.50

NO. 1 CAST SCRAP

Birmingham, cupola	16.00 to 17.00
Boston	18.00 to 18.50
Buffalo	16.00 to 16.25
Chicago, No. 1 machinery	18.25 to 19.00
Chicago, No. 1 railroad or agricultural	17.50 to 18.00
Cincinnati No. 1 machinery cupola (net tons dealers)	17.50 to 18.00
Cleveland, cupola	16.75 to 17.25
Detroit (net tons	14.25 to 14.75
Eastern Pennsylvania, cupola	17.50 to 18.00
New York, cupola (dealers)	14.50 to 15.00
Pittsburgh, cupola	16.00 to 16.50
San Francisco, delivered	20.00 to 21.00
Seattle	17.00
St. Louis, railroad	16.50 to 17.00
St. Louis, agricultural	16.50 to 17.00
St. Louis, machinery	19.00 to 19.50
Valleys	17.50

HEAVY CAST

Boston	15.50 to 16.00
Buffalo (breakable)	13.25 to 13.75
Cleveland	13.00 to 13.25
Detroit (automobile) (net tons)	19.00 to 20.00
Eastern Pennsylvania	16.00 to 16.50
New York (dealers)	12.75 to 14.00
Pittsburgh	15.00 to 15.50

MALLEABLE

Boston, railroad	19.50 to 20.00
Buffalo	17.50 to 18.00
Chicago, agricultural	15.25 to 15.75
Chicago, railroad	16.25 to 16.75
Cincinnati, railroad (dealers)	14.50 to 15.00
Cincinnati, agricultural (dealers)	14.50 to 15.00
Cleveland, agricultural	17.50 to 18.00
Cleveland, railroad	18.50 to 19.00
Detroit	14.00 to 14.50
Eastern Pennsylvania, railroad	14.00 to 15.00
Pittsburgh, railroad	17.00 to 17.50
St. Louis, agricultural	13.00 to 13.50
St. Louis, railroad	14.25 to 14.75

Miscellaneous Scrap

RAILS FOR ROLLING

5 feet and over

Birmingham	14.00 to 15.00
Boston (dealers)	12.00 to 12.50
Buffalo	17.25 to 17.75
Chicago	16.50 to 17.00
Cleveland	16.00 to 16.25
Eastern Pennsylvania	17.00 to 17.50
New York	13.75 to 14.25
Pittsburgh district	18.50 to 19.50
St. Louis	15.25 to 15.75

LOCOMOTIVE TIRES

Chicago, No. 1	17.75 to 18.00
Chicago, cut	17.00 to 17.50
St. Louis, No. 1	16.25 to 16.75

LOW PHOSPHORUS PUNCHINGS

Chicago	15.50 to 16.00
Eastern Pennsylvania	17.50 to 18.50
Pittsburgh	18.00 to 19.00

Scrap

Demand Shows No Increase—Prices Shift Slightly But Show No Trend

WITHOUT definite tendencies the market for iron and steel scrap is drifting, consumer interest being small, though the situation is entirely in the hands of buyers. Some heavy melting steel and some blast furnace scrap are moving, at prices close to those prevailing for some weeks, but buying by dealers to fill contracts makes most of present activity.

Chicago, Nov. 9.—Dealer transactions are bringing out a few higher quotations for iron and steel scrap. Heavy melting steel has changed hands at $13.75, which is 25 cents above the last dealer buying. Interest by a consumer in cast borings is reported to have brought out a price of $10.12, delivered, although the quotation still is $9 to $9.50. On the other hand little scrap is being produced, the supply is ample and consumers are buying sparingly. Few foundries are carrying stocks in excess of 100 tons. No. 1 busheling is 50 cents lower in dealer trading, being quoted at $11 to $11.50, and machine shop turnings are quoted $7.25 to $7.75, a drop of 25 cents. Pipes and flues are $8.25 to $8.75 a net ton.

New York, Nov 9.—Increasing prices of pig iron have stimulated greater interest in borings and turnings. However, consumers do not appear interested in tonnage at prevailing prices, with a result that little business in this material has developed. Trading in other grades also is slack, and with the exception of a slightly further reduction in yard steel, prices are unchanged. Dealers are now offering $9.50 to $10, New York, for yard steel.

Buffalo, Nov. 9.—The scrap market here is lifeless. Reduced operation of producers and scarcity of open top cars have lessened receipts. Prices are nominal and being made solely on the basis of dealer transactions.

Pittsburgh, Nov. 9.—Steel scrap buyers are placing orders on a hand-to-mouth basis. Sales are few, involving small lots, at the most 500 tons. While the trade understands that $18 or slightly higher was the successful bid on the recent list of the Pennsylvania railroad, and similarly high figures for the steel on other railroad lists, consumers' ideas are not so sanguine. Some of them have a price of $17, or at best $17.50, on high grade heavy melting steel, but it is claimed that difficulty is experienced in finding material to sell at those prices.

Detroit, Nov. 9.—Demand for iron and steel scrap continues nominal. Lack of activity features the market. Consumers continue to show little interest and dealers are buying only to meet actual requirements.

Cincinnati, Nov. 9.—Increased demand for heavy melting steel, and the fact that several important dealers have small supplies of this grade have added some stability to the iron and steel scrap market. Dealers receiving more orders for this grade are offering more liberal prices to sellers to bring out larger tonnages. There is a wide range in dealers' buying prices for steel, from $12.75 to $13.50 delivered Cincinnati.

St. Louis, Nov 9.—Sentiment in iron and steel scrap is better than has been the case in recent weeks. Buying by consumers has not opened up to any extent, but advices from Chicago and other centers indicate greater interest, and locally some tentative inquiries have appeared. The melt holds up well, and some reduction in stocks in consumers' hands has taken place.

Birmingham, Ala., Nov. 9.—Deliveries of iron and steel scrap are steady in this district. Much heavy melting steel is due consumers and furnace interests are melting cast scrap. Quotations show little fluctuation.

Boston, Nov. 9.—A better price situation is the only encouragement in the iron and steel scrap market. Consumer demand fails to show improvement. Heavy melting steel is a little unsteady, although sales at $12, shipping point, are being entered. Boston & Albany railroad recently sold 500 tons of heavy melting steel at a price reported in line with the market. Cast grades are marking time. Several cars of No. 1 machinery have sold at $18, delivered.

Philadelphia, Nov. 9.—Iron and steel scrap is quiet and most buying is by brokers to apply on orders.

Cleveland, Nov. 9.—Quiet continues in iron and steel scrap, consumers having no interest and dealers buying little. Prices are almost nominal in the absence of activity.

The iron industry at Chicago dates from 1857.

Sheets

Market Quieter—Prices Firm—Leading Interest Continues Them for First Quarter

DEMAND for sheets is less active than in recent weeks, and some of the leading producers have reduced their operating schedules temporarily 5 to 10 per cent. All consuming lines except building construction and automobiles are taking normal tonnages. Export orders are more in evidence. The leading interest has reaffirmed its present prices for first quarter.

SHEET PRICES, PAGE 1252

Pittsburgh, Nov. 9.—On the eve of general opening of books for first quarter, sheet manufacturers find market levels well maintained and note a fair demand. The buying rate is not as heavy as during October and this of operating schedules by 5 or 10 per was reflected last week in reduction cent. The American Sheet & Tin Plate Co. decreased from 90 to 80 per cent. It will partially regain the loss during this week as it starts manufacturing a rush order for a large tonnage of galvanized corrugated sheets for export to Cuba, involving 1500 to 2000 tons of one size. Other export orders of smaller size, with additional domestic orders, give a large aggregate to the mills each week. Practically every line except building construction and automobiles are normal. The metal lath business, which has the largest total of any year on record, is normal for this season. Electrical sheet requirements still are heavy, as are the needs of agricultural implement and tractor manufacturers. Some attractive orders for blue annealed sheets for small portable oil tanks were received last week. Sheet prices are well maintained, only a few smaller manufacturers cutting in at times under the quoted market levels of 2.40c on blue annealed, 3.10c on black, 3.95c on galvanized, and 4.25c on full finished.

The American company has reaffirmed its present prices for first quarter.

Boston, Nov. 9.—Slightly better sheet orders have been received by leading sellers and prices show less weakness. The bulk of galvanized sheets now are at 3.95c base, Pittsburgh. Black sheets hold at 3.10c, base, Pittsburgh.

New York, Nov. 9.—The Japanese government railways are taking prices in this country on 900 tons of blue annealed sheets. About 10 days ago a Japanese house asked quotations on 6000 tons of black sheets, but the order was not placed. Other Japanese inquiries for black sheets aggregate 2000 to 3000 tons.

Buffalo, Nov. 9.—Sheet demand has slowed down, except numerous small orders for galvanized for November shipment. Producers supplying the automobile trade are faced with the prospect of reducing operations if demand does not improve soon. The 3.00c, base, price on black sheets

probably has been shaded on large lots.

Youngtsown, O., Nov. 9.—Inquiry for sheets throughout the Mahoning valley district eased off last week, not sufficient to cause price cutting. Many mills in this district are scheduled until the end of this month; others have two to three weeks rolling. Most of the forward tonnage has been assigned a delivery date. Few cancellations are being received by producers in this territory. The receipt of specifications during the past week showed a declining tendency. While price weakness is reported as having developed these reports are coming from the South. The southern market is dull because of the cotton situation. Black sheets are quoted at 3.10c, galvanized at 3.95c and blue annealed at 2.40c. A slight recession in the demand for autobody stock is apparent. While specifications coming to makers are of a rush character, the situation is no different from that during the summer months. The price of 4.25c is applying on this grade.

Chicago, Nov. 9.—Deliveries of black and galvanized steel sheets are easier as the fourth quarter advances, but specifications are holding to the rate of the last two months. Order books will be opened shortly for the first quarter, and present quotations are expected to continue. The only resistance to these prices has come from customers buying far in advance. Demand from the roofing industry continues unusually heavy. October business with the roofing trade is reported by a leading sheet producer to have been the largest since January, 1924.

St. Louis, Nov. 9.—Sheet demand holds up surprisingly well. October business was slightly above that of the month last year. Since Nov. 1 specifications and new orders have been maintained at about the average level of last month. The leading local producer continues to operate at capacity. Prices are steady.

Cleveland, Nov. 9.—Further decline in new contracting for sheet requirements was noted in this district in the past week. Specifications on fourth quarter contracts continue steady but new business in some grades is unusuallv light. Blue annealed and galvanized buying is spotty. Barrel makers at present are of the market or are buying in diminished quantities as is cusomary in the pre-inventory season. Black sheets are firm 3.10c on No. 24 gage with some lower quotations rumored. Blue annealed heets are quoted 2.30c to 2.40c and galvanized from 3.85c to 3.95c.

Tin Plate

Leading Interest Reaffirms Present Prices for First Quarter

TIN PLATE PRICES, PAGE 1252

Pittsburgh, Nov. 9.—Tin plate mills generally are preparing to open books for first quarter for jobbers, and for the first half for manufacturers. High operating rates are reported the American Sheet & Tin Plate Co. maintaining its 92 per cent schedule, which will be increased early in December. This interest has reaffirmed present prices for first quarter.

Attractive export orders have aided in maintaining high schedules. Domestic buyers as usual have allowed tin plate makers to anticipate and roll against their next year's requirements of standardized sizes. The current market price is $5.50, per base box.

New York, Nov. 9.—About 2000 tons of tin plate was placed during the week by the Nippon Oil Co. of Japan. Other Japanese tin plate orders aggregated fully as much. Several hundred thousand boxes of tin plate have been placed by Japan in this country in the past few weeks, the business coming here because of inability of British mills to compete.

Rate Hearing Postponed

Washington, Nov. 9.—Hearings which are scheduled to begin before Examiner Faul of the interstate commerce commission in Chicago today in connection with rates on iron and steel between points in Illinois freight committee territory, and iron and steel rates between points in Chicago switching territory, have been postponed and no date yet set for the hearings.

Within the next few weeks, the New York Edison Co., New York, will place in service an underground cable capable of carrying 120,000 horsepower and operating at 180,000 volts. This is said to be twice the voltage of any other underground cable in commercial operation anywhere in the world.

Pipe

Tubular Products Shipments at High Rate—Operations Still Above 90 Per Cent

SHIPMENTS of tubular products in November are at the October rate. Backlogs on some sizes are diminishing and deliveries are easier. Some oil line inquiries are out but few definite programs are being launched. Cast buying is waning although occasional good lots are placed. Detroit has opened bids on 2200 tons of 6-inch. Awards of the week were few.

PIPE PRICES, PAGE 1252 AND 1288

Pittsburgh, Nov. 9.—November shipments of tubular goods are keeping up to the October rate and October was 15 to 20 per cent over October, 1925. Backlogs are being reduced considerably, and slightly better deliveries are available although mill stocks are badly depleted, particularly on some sizes. On 2-inch oil lines early December shipment is the best promise that can be obtained, and on some other sizes four to six weeks is the prevailing shipping date. Present operating rates among pipe mills are between 90 and 95 per cent, and these promise to prevail into next year. A number of tentative oil line inquiries are pending. Oil country goods now desired are wanted shipped quickly and considerable business was lost to several makers here last week because they could not make desired shipment. Prices are firm.

New York, Nov. 9.—Cast pipe demand continues restricted, reflecting seasonal influences. The pipe shops have good backlogs, with the result prices are holding fairly steady. Action in the award of 11,500 tons of pipe for the local water department, again postponed, will probably be taken Nov. 11, according to present indications.

About 600 tons of gas pipe have been placed with an American maker for the municipality of Tokio, Japan.

Chicago, Nov. 9.—Fairly prompt deliveries of 4 to 6-inch cast iron pipe are being made, but shipments of 8-inch and over are 30 to 60 days behind. The Middle West is expected to offer a fair volume of contract business over the remainder of the year, while makers expect good business after Jan. 1. Operations are practically at capacity. Detroit opened bids yesterday for 2200 tons of 6-inch class B pipe.

Boston, Nov. 9.—Orders for small sizes of pipe hold undiminished. Demand has slackened for the large sizes and foundries have caught up on production. Heavy tonnages for 1927 requirements of gas companies in the district are near closing.

Birmingham, Ala., Nov. 9.—Production of cast iron pressure pipe is active and new lettings are frequent. All shops are busy. Quotations hold at $39 for 6-inch and over sizes. Indications point to continued steady operation. Soil pipe production is not as active as previously.

CONTRACTS PLACED

701 tons, 6 to 12-inch class B pipe, Long Beach, Calif., to United States Cast Iron Pipe & Foundry Co.

250 tons, 6-inch pipe, for Sheboygan Falls, Wis., to Lynchburg Foundry Co.

100 tons, 6 and 8-inch pipe, Attleboro, Mass., to Warren Foundry & Machine Co.

CONTRACTS PENDING

1100 tons, 6 to 12-inch pipe, for Mt. Prospect, Ill.; bids in.

1000 tons, cast pipe, 1000 tons steel pipe, water department, New York; Peter F. Connelly awarded general contract.

700 tons, miscellaneous sizes of class B pipe, Newark, N. J.; bids opened Nov. 10.

500 tons, 8-inch class C for Seattle; bids in.
220 tons, 6-inch class B pipe, for Detroit; bids received Nov. 8.
200 tons, 6-inch pipe, Providence, R. I.; bids in.
200 tons, pipe and fittings, Lynn, Mass.; bids in.
101 tons, 6-inch class B San Diego, Calif.; bids in Nov. 22.

Iron Ore

Manganiferous Ore Sold—Dock Balances Lower Than Year Ago

Cleveland, Nov. 9.—The sale of 25,-ganiferous iron ore to a Cleveland in-000 tons of Lake Superior mandependent steel interest is reported from a reliable source. Demand generally is quiet; leading sellers consider the season's business practically finished. Vessels are being laid up, and the movement from the ranges is slackening. Although too early to indicate any definite action on prices, sentiment among certain producers is strongly inclined toward an advance next year.

One reason for the strong position of the market is that stocks on hand in the spring will not be as large as they were last spring, though shipments this year will total nearly 5,000,000 tons more than in 1925. The tendency is shown by the Lake Superior Iron Ore association's current report which gives the amount of ore on docks at Lake Erie ports Nov. 1 as 7,596,568 tons, compared with 7,656,229 tons a year ago. Receipts for the season to Nov. 1 were 38,888,429 tons against 35,453,331 tons a year ago, and shipments from the ports were 27,935,327, compared with 24,965,594 tons last year.

New York, Nov. 9.—Several cargoes of Swedish iron ore have been sold during the past two weeks for delivery in the Philadelphia district. This included considerable low phosphorus ore. Sweden at present is the favored source of foreign iron ore, due to the fact that the transportation situation between Sweden and the United States is more stable than that between Spanish and Mediterranean ports and the United States. The difficulty of getting boats to stop at Spanish and Mediterranean ports for iron ore continues to be an obstacle.

Manganese Ore Stronger

New York, Nov. 9.—The United States Steel Corp. and the Bethlehem Steel Corp. are understood to have placed with W. A. Harriman & Co. their requirements of Caucasian manganese ore over the whole of next year. The principals have not divulged details but it is stated on good authority that the contract price is 40 cents per unit, c.i.f. tidewater, for the washed Caucasian ore. This is materially higher than had been expected, as some high-grade manganese ore was sold in the last few months in small tonnages at a lower price.

Apex Smelting Co., Chicago, has increased capital from $100,000 to $250,-000.

Bars

Output for Year Well Sold—Demand Holds Up Despite Shrinkage in Automotive Buying

IN SPITE of seasonal drawbacks, inventory and smaller automotive demand, soft steel bars continue to be bought and specified in a volume to keep mills well booked, with new business practically balancing shipments. Some curtailment has taken place in mill operation. Prices show no weakness, with premiums sometimes paid for delivery.

BAR PRICES, PAGE 1252

Chicago, Nov. 9.—Sentiment in finished steel is one of expectancy as to what the turn of the year is likely to bring. Among consumers and steel producers the course is fairly well charted for the remainder of the year. Buyers of soft steel bars are specifying at about the average rate of the past three months, which practically is equal to shipments. Shipments of bars and other finished lines have not declined materially from October, despite the shrinkage in steel going into automotive products. A tendency in the trade is to view as significant the increased specifications of automotive parts manufacturers, particularly for hot and cold rolled strip steel. Requirements of parts manufacturers had dropped abruptly, due in part to inventory taking by automotive interests. As parts manufacturers usually plan operations in advance of actual requirements this increased activity is felt by some to be presaging more active automotive production early next year.

Farm implement makers are calling for steel shipments at almost the average for the past few years. The outlook is fairly good. One implement maker reports its domestic business operating better than 60 per cent, while its foreign plants are operating above a prewar basis. Specifications for deformed bars have dropped sharply. On soft steel bars the 2.10c quotation is firm.

New York, Nov. 9.—There is less business in steel bars in this territory but the strength of the market is impressive. The range of prices is 2.00c to 2.10c, base, Pittsburgh, equivalent to 2.24c to 2.34c, delivered New York, and a considerable percentage of the business is going at the higher figure.

Buffalo, Nov. 9.—Bar demand has slowed somewhat. Steelworks operation is off about 5 per cent from the high point of 85 per cent of plant capacity which was maintained during October. Bars are quoted at 2.265c to 2.365c with the minimum available only to large buyers.

Pittsburgh, Nov. 9.—Bar specifications are shrinking somewhat below the October rate, attributed to the seasonal decline in automobile activity. Other consuming lines still maintain a fair buying rate. Bar mill operations have been curtailed, the average now being 75 to 80 per cent. The price situation still is sound, occasional single carloads being booked at 2.10c, with the regular market quotable at 2.00c. Bars are wanted by coal mine car builders and other equipment manufacturers, but cold finishers' specifications are light.

Refined iron bar demand is not expanding. Customers' needs are limited and buying is on a hand-to-mouth basis, all orders being for small lots. Prices are firm however, starting at 3.00c.

Boston, Nov. 9.—Bar sales have improved by more than 30 per cent, according to leading sellers. Demand for alloy bars is particularly heavy. The price holds unchanged at 2.00c, Pittsburgh.

Cleveland, Nov. 9.—With the exception of the automotive industry, on which some interests believe too much stress has been laid, demand for soft steel bars shows no decided variation. Most users are taking in their quotas and consumption on the whole is only a few points off from the recent high level. Bolt and nut makers are taking big tonnages in the aggregate. The new local mill is quoting 2.00c, Cleveland, while other makers are quoting 2.00c, Pittsburgh. This price competition is said not to be affecting the market extensively outside of Cleveland proper.

Hoops and Bands

Production Continues High and Price Is Held Firmly

HOOP PRICES, PAGE 1252

Pittsburgh, Nov. 9.—Specifications for hoops and bands have slowed down a trifle, with lower production on the part of automobile parts makers. Other consuming lines, however, are maintaining fairly heavy buying rates and thus hoop and band makers are still operating at fairly high rates. The price is firm at 2.50c, and that has applied in a number of instances where tentative first quarter inquiries have come out.

With aluminum production in Germany being increased progressively since the Inn Werke at Toeging, Bavaria, went into operation last year, 1926 production is expected to be 20,000 to 25,000 tons, according to Trade Commissioner Daugherty, Berlin.

Structural Shapes

New York Subway Inquiries Feature Week's Market—Awards Are More Numerous But Small Lots Continue to Predominate

FEATURING the week's structural market is the inquiry for more than 23,000 tons of New York subway work. One section of 11,500 tons is on the point of closing. Awards of subway work took 1650 tons in the past week. Small tonnages continue to predominate in the present market, although activity is more widespread than in the previous several weeks. A seasonal drop in building operations is being felt in some cities. New inquiry in Philadelphia territory is the largest in many months and involves fully 40,000 tons. Total inquiry exceeds 100,000 tons.

Prices continue fairly stable at equivalents to 1.90c to 2.00c, Pittsburgh, on plain material. Fabricated quotations continue to vary widely, depending upon the conditions of different fabricators.

STRUCTURAL SHAPE PRICES, PAGE 1252

New York, Nov. 9.—Inquiries for more than 23,000 tons of subway work for this city feature the local structural market. In addition, 1650 tons of this work has just been placed and 11,500 tons is on the point of being awarded. Shape prices are firmer at 1.90c to 2.00c Pittsburgh, than they have been in some time.

According to figures just compiled by the New York Structural Steel Board of Trade, steel placed in the New York metropolitan district in October for work exclusive of bridges, piers, subways, etc., aggregated 30,400 tons, as against 34,130 tons in the preceding month.

Boston, Nov. 9.—A marked let-up in structural shape sales has developed at Boston. In Rhode Island strikes, recently started, are holding up at least three attractive jobs. The plain material price ranges from 1.90c to 2.00c Pittsburgh.

Pittsburgh, Nov. 9.—Meager structural shape awards indicate a seasonal slump in building operations. The price situation remains fairly strong so far as the mill quotation of 2.00c is concerned, although bids on material fabricated and erected reflect a hunger for business.

Cincinnati, Nov. 9.—Awards of structurals have been more numerous and have added stability to the market. Plain material generally is quoted 2.00c, Pittsburgh, but a lower price undoubtedly could be obtained on attractive tonnages.

Chicago, Nov. 9.—Specifications for plain material are running close to shipments, but new buying is declining with the seasonal laxity in building. A number of important projects are in prospect for early next year, including the Hotel Sherman tower, the addition to the Congress hotel, and a large structure for the University of Chicago. A number of clubs and office buildings in Chicago also are to be placed within the next three months. Standard Oil Co. is inquiring for 2000 tons of structurals for storage purposes at Whiting, Ind.

Cleveland, Nov. 9.—Specifications against structural plain material contracts are being maintained at an even level, but new business is lacking. Specific awards are few and involved light tonnages. Plain material prices are steady at 2.19, Cleveland, or 2.00c, Pittsburgh. Fabricated quotations are variable but generally above this time last year.

St. Louis, Nov. 8.—Activity in structural steel has dropped to the lowest point in a number of months. There have been no lettings of any size, and the number of small jobs, which until quite recently had held up well, has diminished. Fabricators, still have fair order books.

Philadelphia, Nov. 9.—Structural outlook here is the most promising in a long time with more projects before the trade than ever before at one time. Projects out for bids or which will come out shortly aggregate fully 40,000 tons. Recent lettings are fair. Bookings continue under shipments and mills now are scheduled one to three weeks ahead. Current prices range from 1.85c to 2.00c, Pittsburgh, with even lower done in some instances.

Awards Compared

	Tons
Awards this week	20,827
Awards last week	21,394
Awards two weeks ago	19,894
Awards this week in 1925	56,848
Average weekly awards, Oct.	21,312
Average weekly awards, 1926	27,986
Total awards to date, 1925	1,526,481
Total awards to date, 1926	1,252,223

CONTRACTS PLACED

2604 tons, involved in the following items:
Bank and office, 407-09 Broadway, New York, to Hedden Iron Construction Co.
Office and showroom, 151 East Eighty-sixth street, for New York Edison Co., New York, to Hedden Iron Construction Co.
15-story apartment, 419-29 East Fifty-seventh street, New York, to Paterson Bridge Co.
21-story office, 269 Madison avenue, New York, to Levering & Garrigues Co.
Apartment, Eighty-eighth street and West End avenue, New York, to Levering & Garrigues Co.

1800 tons, Manger hotel, Fifty-first street and Seventh avenue, New York, to Taylor-Fichter Construction Co.; this was previously noted as going to an unstated fabricator.

1800 tons, 15-story apartment, Seventy-second street and Park avenue, New York, to Easton Structural Steel Co.

1800 tons, May Co. garage Ninth and Hill streets, Los Angeles, to McClintic-Marshall Co.

1650 tons, subway section 6-F, route 8, Brooklyn, N. Y., to an unstated fabricator.

1300 tons, Bronx hospital, New York, to Hedden Iron Construction Co.

1200 tons, bridgework for Louisville & Nashville railroad, 1100 tons to McClintic-Marshall Co., 100 tons to Bethlehem Steel Co. and 100 tons to Mt. Vernon Bridge Co.

1200 tons, Huntington apartments, Philadelphia, to McClintic-Marshall Co.

1100 tons, Braun building, Alhambra, Calif., to Llewellyn Iron Works.

700 tons, junior high school, Sixteenth and Wharton streets, Philadelphia, to Bethlehem Construction Co.

680 tons, 15-story apartment, 223 East Fifty-second street, New York, to Taylor-Fichter Steel Construction Co.

600 tons, Dabis Buick Co. building, Philadelphia, to McClintic-Marshall Co.

500 tons, office, Broadway and Seventh avenue, Astoria, Long Island, to Hinkle Iron Works.

500 tons, public school No. 101, New York, to Bethlehem Fabricators Inc.

500 tons, apartment Sixty-fourth street and West End avenue, New York, to Easton Structural Steel Co.

430 tons, high school, Richmond, Calif., to Pacific Coast Engineering Co.

400 tons, building for Standard Oil Co. of New Jersey, 26 Broadway, New York, to an unstated fabricator.

400 tons, apartment, 990 Fifth avenue, New York, to Bethlehem Fabricators, Inc.

350 tons, store and theater building, 2101 Church avenue, Brooklyn, N. Y., to Hinkle Iron Works.

350 tons, Buck Creek power house, Great Western Power Co., San Francisco, to Pacific Rolling Mill Co.

325 tons, bridge for New York Central railroad, to an unstated fabricator.

275 tons, bridge for Pennsylvania railroad, to American Bridge Co.

250 tons, Church of the Immaculate Conception, Philadelphia, to McClintic-Marshall Co.

225 tons, bridge for Pennsylvania railroad, to Phoenix Bridge Co.

200 tons, office at 144th street and Cortland avenue, New York, to Kues Bros.

200 tons, factory, Maspeth, Long Island, to Brooklyn Iron Works.

200 tons, miscellaneous work including Stoecklein Dairy Co.'s building, Pittsburgh, to Guibert Steel Co.

175 tons, school, Baltimore and Thomas streets, Philadelphia, to McClintic-Marshall Co.

175 tons, school, Allens Lane, Philadelphia, to McClintic-Marshall Co.

173 tons, building at Thirty-first and Diamond streets, Philadelphia, to McClintic-Marshall Co.

150 tons, gymnasium for high school, Ridgefield Park, N. J., to Oltmar Iron Works.

150 tons, high school, Darian, Conn., to Porcupine Co.

125 tons, bridge for Pennsylvania railroad, to Bethlehem Steel Corp.

120 tons, building for Congoleum-Nairn Inc., Kearney, N. J., to Albert Smith & Sons.

100 tons, armory building, Sixty-eighth street and Lexington avenue, New York, to Shippers Car Line Corp.

100 tons, freight station for New York Central railroad, New York, to Levering & Garrigues Co.

100 tons, San Lorenzo Creek bridge, Hayward, Calif., to Western Iron Works.

100 tons, factory building, Providence street, Newark, N. J., to Alfred Smith & Son.

100 tons, plant addition for the Thatcher Furnace Co., South avenue, Garwood, N. J.,

to the Arny Structural Steel Co.
100 tons, post office, Avenue U and Fourth street, Brooklyn, N. Y., to Cornfield Iron Works.
100 tons, service building, Riverside hospital, New York, to Bethlehem Fabricators Inc.
100 tons, monastery, Holland avenue and Dunhill road, New York, to Square Iron Works.
100 tons, meeting house, Chester, Pa., to McClintic-Marshall Co.
Unstated tonnage, apartment, 12-28 East Seventy-second street, New York, Easton Structural Steel Co.

CONTRACTS PENDING

14,500 tons, subway section 3, route 101, New York; general contractors' bids to be opened Nov. 26.
14,000 tons, Fidelity & Philadelphia Trust building, Philadelphia; revised bids open Dec. 15.
10,000 tons, convention auditorium, Atlantic City, N. J.; revised bids open Nov. 24.
8650 tons, subway section 4, route 101, New York; general contractors' bids to be opened Nov. 26.
5000 tons, Provident Trust building, Philadelphia; bids to be taken in December or January.
4500 to 5000 tons, building for the New York Athletic club, New York, pending; previously noted as involving 7500 tons.
4500 tons, Green Lane bridge, Manayunk, Philadelphia; pending.
3000 tons, Irvine auditorium, University of Pennsylvania, Philadelphia; pending.
2200 tons, 21-story apartment for Henry Mandel, 109-23 East Fifty-sixth street, New York; bids asked.
2000 tons, Pennsylvania hospital nurses' home, Philadelphia; expected out for bids shortly.
2000 tons, high school, Wilkesbarre, Pa.; pending.
1700 tons, theater, Twenty-first and Market streets, Philadelphia; pending.
1500 tons, city hall, Baltimore; pending.
1500 tons, 14-story apartment, Fifth avenue and Eighty-third street, New York, bids asked.
1400 tons, Builders Exchange, San Francisco; bids being received.
1000 tons, Pollard store building, Lowell, Mass.; bids being taken.
800 tons, Aiken apartments, Pittsburgh; awarded a local independent steel fabricator, but some delay has been encountered.
700 tons, addition to plant of Victor Talking Machine Co., Camden, N. J.; pending.
700 tons, Corn Exchange bank, Eighth avenue and Forty-second street, New York; William Kielnle, 101 Park avenue, New York, awarded general contract.
600 tons, 7-story building, 20-22 West Fifty-seventh street, New York; pending.
600 tons, West Jersey Homeopathic hospital addition, Camden, N. J.; up for revised bids.
600 tons, 15-story apartment, 313-21 West Eighty-sixth street, New York; bids asked.
500 tons, Chamberlain theater, Pottsville, Pa.; pending.
500 tons, new plant for John Van Range Co., Cincinnati; bids in.
500 tons, store building for the First National Stores Co., Boston; bids asked.
500 tons, hospital, Eaglesville, Pa.; pending.
450 tons, 4-story club house for the United Order of Two Sisters, 153-56 West Eighty-fifth street, New York; bids asked.
400 tons, Glencourt exchange telephone building, Oakland, Calif.; bids received.
400 tons, junior high school, Philadelphia; pending.
350 tons, Jewish synagogue, Philadelphia; pending.
300 tons, Catholic high school, Sixteenth and Allegheny streets, Philadelphia; pending.
300 tons, garage, Fairmount avenue, Philadelphia; pending.
300 tons, Connellsville, Pa., hospital; award to be made this week.
200 tons, elementary school, Philadelphia; pending.
200 tons, addition to Hinks department store, Berkeley, Calif.; bids being received.
185 tons, Masonic temple, Burlingame, Calif.; bids in.
150 tons, bridge for the Pennsylvania railroad; pending.
125 tons, theater at McKees Rocks, Pa.; general contract awarded the Miller Construction Co.
Tonnage unstated, state normal school, West Chester, Pa.; pending.
Tonnage unstated, refinery buildings at San Pedro, Calif., for Shell Oil Co., Los Angeles; plans being prepared.
Tonnage unstated, school buildings and stadium for board of education, St. Louis; pending.

Concrete Bars

New Demand Declining But Operations Remain High—Small Lots Prevail

NEW demands for concrete reinforcing bars are falling off as winter approaches. Roadbuilding operations are being completed in northern states. Belgian mills were successful in booking 800 tons at Conowingo, Md. Inquiries are mostly small but include 2000 tons for a building in Cincinnati. Eastern awards were heavier in the past week.

REINFORCING BAR PRICES, PAGE 1252

Chicago, Nov. 9.—Larger rail steel reinforcing bar warehouses are working off backlogs of rush work. One has been unable to estimate on recent projects owing to pressure of pending work. Fresh building projects are declining but general contracts for a large number of new apartment buildings are being awarded. October building activity was higher than had been realized. Building permits in Chicago for October, at $49,439,600, were 37 per cent over October of last year. A number of small lots of rail steel bars have been sold at 2.10c, Chicago warehouse, but the bulk of the business is going at 2.00c. Billet steel awards are on the basis of 2.25c to 2.60c.

Boston, Nov. 9.—Much work is in sight but no recent awards are noted in the concrete bar market. Prices are unchanged. New work totals approximately 2000 tons.

Buffalo, Nov. 9.—Inquiry for reinforcing bars has picked up considerably. A lot of 400 tons is wanted for one project here; another of 350 tons for a flour mill and several projects of fair size are pending. Ordinary business is being filled from Buffalo stocks of producers at 2.75c but mill shipment tonnage can be purchased at 2.265c.

Pittsburgh, Nov. 9.—Several concrete bar projects are reaching the closing stage in this territory, taking appreciable tonnages. Awards last week were small and no lettings were noted in state highway commission work. The mill price is firm at 2.00c and some effort is being made to obtain 2.10c on small quantities.

Cleveland, Nov. 9.—Road building in this district is being completed before winter weather, and new buying for that purpose is limited to fill in lots. Building still is hampered by labor conditions. Awards are confined to carloads or less and inquiries also are light. New billet bars are steady at 2.19c, Cleveland, and rail steel at 1.80c, mill.

Cincinnati, Nov. 9.—The reinforcing bar market is displaying unusual activity for the season. Awards the past week totaled approximately 2000 tons and projects pending on which bids already have been taken aggregate close to 3500 tons. New billet bars are quoted 2.00c, Pittsburgh, while the Pollak Steel Co., is asking 1.90c, Marion, O. on rail steel. These quotations can be shaded where attractive tonnage is involved.

Awards Compared

	Tons
Awards this week	8,615
Awards last week	3,892
Awards two weeks ago	3,822
Awards this week in 1925	5,965
Average weekly awards, Oct.	8,072
Average weekly awards, 1926	6,498
Total awards to date, 1925	279,078
Total awards to date, 1926	291,955

CONTRACTS PLACED

2200 tons, Baker warehouse, Houston, Tex., to Laclede Steel Co.
800 tons, power plant development, Conowingo, Md., through Stone & Webster Engineering Corp., to A. Johnson & Co. Inc., agents for Societe Annonyme Dougree Maryhaye. This is in addition to 2450 tons recently placed with the same seller and leaves about 2500 tons remaining pending.
500 tons, building for Congoleum Nairn Inc., Kearny, N. J., to Faitoute Iron & Steel Co., through the contractor, Salmond Scrinshaw Co.
410 tons, Girls' high school, Baltimore, to Kalman Steel Co., through P. C. Street Engineering Co.
350 tons, motor ramp garage, Baltimore, to McClintic-Marshall Co., through Consolidated Engineering Co.
300 tons, apartment, Wissahickon and Oak Lane, Philadelphia, to Kalman Steel Co.
300 tons, sewer, Baltimore, to Maryland Steel Products Co.
285 tons, Medical Arts building, Baltimore, to Dietrich Bros.
272 tons, Pontiac Engineering Co. building, Chicago, to Olney J. Dean & Co.
250 tons, Heide building, Philadelphia, to Davis Bros.
250 tons, warehouse for Crane Co., San Francisco, to Gunn, Carle & Co.
200 tons, Hearst-Moulder school, San Francisco, to Badt-Falk Co.
200 tons, plant addition, varnish works, Ault & Wiborg Co., Cincinnati, to Ferro Concrete Construction Co.
150 tons, miscellaneous work in Pittsburgh area, to Concrete Steel Co.
150 tons, building in Pittsfield, Mass., to Rivet Grip Steel Co.
130 tons, Hebard storage warehouse, North side, Chicago, to Olney J. Dean & Co.
125 tons, high school, Richmond, Calif., to W. S. Wetenhall Co.
123 tons, two bridges, Eaton Canyon, Wash., and San Diego, Calif., to unnamed interest.
120 tons, Church of the Heavenly Rest, New York, to Kalman Steel Co.
100 tons, plant additions at Cleveland for National Carbon Co., to Paterson-Leitch Co.
100 tons, International Folding Paper Box Co., building, North Bergen, N. J., to Joseph T. Ryerson & Son Inc., through the contractors, Bonnanno Bros.
100 tons, theater, Marysville, Calif., to W. S. Wetenhall Co.
100 tons, Union high school, San Mateo, Calif., to unstated San Francisco jobber.
100 tons, apartment building on Kenwood

avenue, Chicago, to Concrete Engineering Co. James McHugh Sons, 840 West Seventieth street, Chicago, contractors.
100 tons, building for Ward Baking Co., at Baltimore, to McClintic-Marshall Co.
100 tons, grade crossing for Reading railroad, Philadelphia, to McClintic-Marshall Co.
100 tons, sewer, Philadelphia, to Baker Warehouse Co.
100 tons, apartment at 739 Belmont avenue, Chicago, to Concrete Engineering Co.
100 tons, Statler-Erlanger theater, Buffalo, to unstated Buffalo fabricator.
100 tons, miscellaneous work in Pittsburgh including foundations for the Roosevelt hotel, Pittsburgh, to Carlem Engineering Co., through Landau Bros. Construction Co., general contractor.
100 tons, City Center building, Baltimore, to Milton Mfg. Co., through Cogswell-Hoether Co.
100 tons, Stanley theater, Baltimore, to Dietrich Bros.
100 tons, Great Atlantic & Pacific warehouse, Baltimore, to Dietrich Bros.
100 tons, including 60 tons for Goodyear Tire & Rubber Co. plant additions, Akron, O., to Franklin Steel Works.
Tonnage unstated, Perth Amboy city hospital, Perth Amboy, N. J., to Concrete Steel Co., through G. W., Mercer Construction Co.
Tonnage unstated, Howard university building, Washington, to Truscon Steel Co., through Consolidated Engineering Co.

CONTRACTS PENDING

2000 tons, addition to Union Central Life Insurance building, Cincinnati; bids in.
1400 tons, two buildings for First National Stores Inc., Boston; bids in.
1100 tons, Masonic building, Providence, R. I.; bids in. General contract let to A. W. Merchant Co., Providence, R. I.
900 tons, Warren Nash Service station, New York; engineers, Parker & Shaffer.
640 tons, state highway bridge at Ashtabula, O.; action expected next spring.
600 tons, Montefiore hospital, Pittsburgh; bids in.
450 tons, Cottage Farm bridge, Boston; bids in.
400 tons, Scaquajada creek drain, Buffalo; Buffalo Dredge Co., Buffalo, contractor.
400 tons, Grove street pier, Oakland, Calif.; Clinton Construction Co. low bidder on general contract.
350 tons, International Milling Co. flour mill, Buffalo; bids in soon.
350 tons, estimated tonnage for addition to Republic Bank Note Co.'s building, Forbes street, Pittsburgh; plans to be made public this week.
150 tons, auto building, Van Ness avenue, San Francisco; bids being received.
130 tons, Roosevelt school, Fresno, Calif.; W. J. Ochs low bidder on general contract.
100 tons, state hospital, Connellsville, Pa.; bids in, but understood to be above estimates.
Tonnage unstated, $2,000,000 memorial bridge, Lorain, O.; plans being drawn.

Automotive Engineers to Discuss Transportation

A symposium on transportation will be held during a two days' meeting of the Society of Automotive Engineers at the Copley Plaza hotel, Boston, Nov. 16-17. Papers to be presented include: "The Motor Truck's Place in Transportation," by F. I. Hardy, assistant to the chairman of executive committee, Boston & Maine railroad; "Scientific Transportation," a study of the use of container systems, by William P. Kellett, consulting engineer; "Trucking at Railroad Freight Terminals," by Bruce V. Crandall, president of *Railway Review;* "Economics of Motor Vehicle Transportation Correlated with Steam and Electric Railroads," by G. L. Wilson, Wharton School of Finance and Commerce, University of Pennsylvania; "Maintenance Tools and Fixtures," by A. H. Leipert, district service manager, International Motor Co.

Rails, Cars

Rails and Track Accessories Feature Market—More Car Inquiries Contemplated

AWARD of 50,000 tons of rails in the Chicago district, placing of 12,000 tons of tie plates, and heavy inquiries for track accessories feature the railroad equipment market of the past week. Pennsylvania seeks 75 locomotives. Car awards are featured by placing of 1500 tank cars. More prospective car business is developing. Missouri Pacific is to buy 4000.

RAILROAD TRACK MATERIAL PRICES, PAGE 1252

New York, Nov. 9.—Domestic freight car buying, contrary to general expectations, fell off in October to a total of 2840 cars. In September the total was 3335. The year's total thus far is 47,660. Current buying continues slack, with little new inquiry.

Following is a comparative statement of monthly freight car awards:

October	2,840
September	3,335
August	152
July	1,265
June	4,285
May	448
April	4,615
March	8,995
February	12,895
January, 1926	8,830
1925	
December	16,885
November	11,685
October	11,145
1923 total	103,487
1924 total	144,425
1925 total	77,110
1926 total, 10 months	47,660

Heavy buying of track supplies is expected to be done in this territory in the next few weeks. The leading requirements are those of the New York Central. This interest is inquiring for 3,000,000 tie plates, 40,000 to 50,000 kegs of track spikes, 20,000 kegs of track bolts and other material.

Pittsburgh, Nov. 9.—Demand has simmered down to a more or less steady gait in light rails, orders calling for one to three carloads. The price is firm at $36.

While track accessory manufacturers' operations are somewhat slack, this is no more than seasonal. The Pennsylvania and other lines continue to place small orders.

Chicago, Nov. 9.—Chicago mills were awarded more than 50,000 tons of rails the past week, bringing the total rail tonnage placed in the district this fall above 550,000. The 50,000 tons include the Missouri Pacific allotment, which was closed a week ago, and the remainder was for several small roads In addition, the Missouri Pacific also placed its order for 12,000 tons of tie plates, this going to a western mill at a price said to figure below $47, Chicago. Most tie plate business awarded in this territory is on the basis of $47. Tie plate inquiry alone now figures at 20,000 to 22,000 tons. Few roads have awarded their accessory business.

It is reported the Missouri Pacific soon will come into the market for 4000 freight and 64 passenger cars, but the St. Paul inquiry for 1000 automobile and 500 stock cars has not appeared. Illinois Central is said to be contemplating an inquiry for 7000 freight cars.

Philadelphia, Nov. 9.—Pennsylvania railroad is negotiating for a large tonnage of tie plates, spikes and other track materials. Reading railroad is expected to inquire soon for track materials.

CAR ORDERS PLACED

Buffalo, Rochester & Pittsburgh, 1000 steel hopper repairs, divided between Pressed Steel Car Co. and American Car & Foundry Co.
Crystal Coal & Coke Co., 50 mine cars to Hockensmith Wheel & Mine Car Co.
E. E. White Coal Co., 100 mine cars, to Watt Car & Wheel Co.
Gulf Refining Co., 500 tank cars, to Standard Tank Car Co.
Harwick Coal & Coke Co., 325 mine cars, 100 to American Car & Foundry Co., and 225 to Hockensmith Wheel & Mine Car Co.
Long Island railroad, 60 passenger motor cars and 30 trailer cars, 20 passenger cars for steam service and four combination passenger and baggage cars, to American Car & Foundry Co.
New York, Chicago & St. Louis, two dining cars, to Pullman Car & Mfg. Corp.
Phillips Petroleum Co., 700 tank cars, to Standard Tank Car Co.
Standard Tank Car Co., 300 tank cars, to be built in its own shops for leasing.
United States Cast Iron Pipe & Foundry Co., six gondola cars, to American Car & Foundry Co.

LOCOMOTIVE ORDERS PLACED

Alton & Southern, one locomotive, to American Locomotive Co.
Boston & Maine railroad, 16 auxiliary locomotives known as "boosters," to Bethlehem Steel Co.

CAR ORDERS PENDING

Argentine State railways, 50 caboose cars; pending.
Chicago & North Western, eight baggage cars; pending.
Conley Tank Car Co., 100 tank cars; bids asked.
Datia State Railways of India, 12 to 24 gondola cars; bids asked.
Union Pacific, 17 baggage cars; pending.

LOCOMOTIVE ORDERS PENDING

New York Central, 70 locomotive tenders; bids asked.
Norfolk Southern, three locomotives; bids asked.
Pennsylvania, 75 locomotives; pending.
Seaboard Air Line, 35 or more locomotives; under negotiation.
Western Maryland, 20 locomotives; contemplated.

More iron rails were manufactured than steel rails until 1877.

Wire

Demand from Western Farms Improves—Small Orders and Low Stocks Rule

BACKWARD buying of wire and wire products in the West, the result of unusual weather conditions, has been succeeded by better demand, though the improvement is not marked. Demand for nails is less as the building season wanes. Manufacturers of products from wire continue to take large tonnages. Prices are holding steadily.

WIRE PRICES, PAGE 1252

Chicago, Nov. 9.—Distribution of wire products, which had been hampered seriously in Illinois and Iowa because of wet fall weather, is much improved. Jobbers in the south and southwest are feeling more cheerful than a week ago but buying still is spotty, partly influenced by the cotton surplus. Northwestern jobbers are more optimistic and report practically normal fall business. Manufacturing demand continues active, except in nails. Mills do not expect operations to exceed the present 60 per cent rate the remainder of 1926 but foresee a heavier buying movement early in 1927. No weakening of quotations on wire and nails is indicated.

Pittsburgh, Nov. 9.—Small orders are still the rule in wire products. Wire for fencing is dull and wire nail orders have slowed down considerably, due to curtailed building operations. The fact that jobbers' stocks generally are low, in some cases below normal, presages some early buying. No start has been made against first quarter, but specifications on manufacturers' wire for this quarter are good. Base prices are maintained, 2.50c on plain wire and 2.65c on wire nails. Wire mill operations average 50 per cent.

Boston, Nov. 9.—The wire price situation is unsettled but sales of both plain and wire nails have improved. The price of plain wire is nominally 2.65c, Worcester, but this is being shaded for delivery in the Boston district.

Bolts, Nuts, Rivets

Added Strength Appears and Prices Are Better Maintained

NUT AND BOLT PRICES, PAGE 1252

Chicago, Nov. 9.—Despite hesitancy by farm implement works in specifying against commitments for bolts and nuts, shipping orders practically are equivalent to last year. The cotton situation still is a factor in implement makers' operating plans. Railroad requirements are meeting expectations. Bolt and nut makers expect operations to continue at 60 to 65 per cent for the remainder of the year While structural rivet demand is easier, small lots continue to be placed at 2.75c, Chicago. Bolt and nut quotations continue firm.

Pittsburgh, Nov. 9.—A trifle more strength is manifested in nuts and bolts in that discounts are better maintained. Books are not yet open for first quarter and buying is of small proportions. Occasional single carloads are noted, but most purchases involve less than carloads. This is true also of rivets and while some lower prices are noted elsewhere, the market levels of 2.50c to 2.60c are claimed to be well observed by large producers here.

Cleveland, Nov. 9.—Specifications for bolts and nuts have tapered off somewhat in this district but a good volume of business still is going with plants operating about 60 per cent of capacity against a 70 per cent rate a few weeks ago. Rivet makers report a steady demand with operating rates unchanged from recent levels. Prices in the bolt, nut and rivet markets remain firm.

Strip Steel

Increased Interest Appears and Prospects Are Improved

STRIP PRICES, PAGE 1252

Chicago, Nov. 9.—Automotive parts manufacturers are reviving interest in hot rolled strip steel after several weeks of sharp falling off in specifications. Freshened market activity is said to be following recent inventory taking and forecasting improved automotive specifications early next year. Cold-rolled strip steel has gained some strength in demand. The latter is quoted at 3.45c to 3.70c, delivered, Chicago. Hot rolled strip steel is firm at 2.50c to 2.60c, Chicago.

Pittsburgh, Nov. 9.—Yesterday a start was made on first quarter strip steel bookings. Some automotive tonnage was booked at the same figures as prevailed for this quarter, 2.30c on hot and 3.50c to 3.60c on cold. Lower figures than that minimum are procurable on cold strips and buyers are pressing their advantage as much as possible. Some producers who have to purchase billets and slabs and cannot obtain lower figures on them claim they cannot sell below 3.50c to 3.60c. Miscellaneous consuming lines are rushing specifications through and some attractive tonnages have been furnished. One manufacturer reports business so far this month is at least 300 tons ahead of October to the same date but this condition is exceptional, most makers noting a falling off in business. Strip-making is on a 60 per cent basis.

Cleveland, Nov. 9.—Metal furniture and metal trim buyers of strip steel continue to take out tonnage, but automotive manufacturers continue to defer shipments. Demand consequently is below that of early October. Specifications against contracts continue at an even pace. Narrow hot rolled strip is firm at 2.50c and wide at 2.30c. Cold finished strip is slightly weaker as demand has fallen off. On most going business 3.40c now is quoted.

Cold Finished Steel

Effect of Inventory Taking Wearing Off—Orders Increase

Pittsburgh, Nov. 9.—Enough miscellaneous business in cold finished bars is coming from various lines of consumption to maintain operations at 50 to 60 per cent. Automotive tonnage, however, is low. Only an occasional purchase is noted by an automotive consumer because stocks generally are low. Releases have been received on some recent suspensions but a number of automotive customers are commencing to take inventories or are preparing to do so, and are paring down stocks. One or two already have completed inventories and yesterday specified some material for immediate shipment. The usual price is 2.40c.

Wheeling Steel Net Shows Gain

Wheeling Steel Corp. and subsidiaries report for quarter ended Sept. 30, 1926. net profit of $1,295,022 after depreciation, interest, federal taxes, etc. This compares with $1,208,048 in preceding quarter and $1,125,594 in third quarter of 1925. Net profit for first nine months of 1926 totaled $3,582,684 against $2,720,471 in same nine months of previous year. Consolidated income account for the quarter ended Sept. 30, 1926, compares as follows:

	1926	1925
Net after fed. taxes	$2,617,390	$2,433,445
Depreciation, etc.	925,876	886,493
Interest	396,492	421,358
Net profit	$1,295,022	$1,125,594
Pfd. & and B dividends	862,410	2464,185
Surplus	$ 432,612	$ 661,409

Class one railroads on Oct. 15 had 9290 locomotives in need of repair or 14.9 per cent of the number on line, according to the American Railway association. This was an increase of 401 over Oct. 1, at which time there were 8889 or 14.2 per cent. Serviceable locomotives in storage on Oct. 15 totaled 4242 compared with 4680 on Oct. 1.

Nonferrous Metals

Buying Varies During Past Week and Prices Generally Have Been Easy—Shipments of All Metals Still Are Large

Prices of the Week, Cents a Pound

	Copper—Electro delivered	Copper—Lake delivered	Copper—Casting refinery	Spot Straits Tin, N. Y.	Lead New York	Lead East St. Louis	Zinc St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
Nov. 3	13.97½	14.12½	13.65	69.62½	8.00	7.80	7.25	27.00	13.00	35.00
Nov. 4	13.90	14.10	13.62½	69.00	8.00	7.77½	7.22½	27.00	12.75	35.00
Nov. 5	13.87½	14.10	13.60	69.00	8.00	7.77½	7.17½	27.00	13.00	35.00
Nov. 8	13.87½	14.00	13.55	69.75	8.00	7.77½	7.17½	27.00	13.12½	35.00
Nov. 9	13.87½	14.00	13.60	71.37½	8.00	7.77½	7.20	27.00	13.50	35.00

NEW YORK, Nov. 9.—Buying of nonferrous metals has been active in some respects and slack in others in the past week and prices have been generally easy though in the past day or two there have been signs of steadiness.

Zinc sales run along steadily from day to day, while in copper good business was done a day or two ago, and tin has been quiet since big activity about a week ago. Buying of November lead on the East St. Louis basis has been large. Shipments of all metals still are large while stocks in all places appear moderate, and in some places are small.

Copper—Metal has sold at 13.87½c, Connecticut, and 14.00c, Midwest, but prices 5 points higher also have done in the past few days. Buying increased recently but buyers still hold off as much as possible and drive for bargains. Interest is mostly in December shipment but some is shown both earlier and later positions.

Zinc—Prime western has eased a little farther, with business the past few days mostly at 7.15c to 7.20c, East St. Louis the latter being mostly prompt at a premium of 2½ points. The week's business has been fair, and a good proportion of it for December. High grade is strong and unchanged at 9.25c to 9.50c.

Tin—This metal has been coming back since its break about a week ago but sales have been lighter since the rise started. There is nothing new in the situation but wide fluctuations are natural as the market is sensitive, having smaller demand but yet not enough of a let-up to cause real weakness. Supplies still are tight, as shown by the big premium of 1 cent on prompt.

Lead—The market has been fairly steady since dropping to 8.00c, New York, a week ago and the East St. Louis market looks firmer after easiness following the eastern cut. Sales in the Midwest have been large and for November.

Metal Products—Prices have been unchanged in mill products except a cut of ¼ cent in lead sheets and pipe. Brass and copper mills are running along at a steady rate but their order books are lighter. The condition of the copper market has been such as to discourage product buying lately.

Aluminum—Prices are steady but business is unusually light. Users are well cared for on old contracts and it is not yet time for new ones though it may be soon.

Nickel—Prices are unchanged.

Rates on Imported Pig Iron Protested

Washington, Nov. 9.—A complaint has been filed with the interstate commerce commission by the United States Cast Iron Pipe & Foundry Co., Burlington, N. J., against the Southern railway and several other roads, in which it is charged that rates on imported pig iron from Mobile, Ala., to Birmingham and Bessemer "have been and are now unreasonable." The rate to Birmingham and Bessemer is $3.60 per gross ton and to Anniston, Ala., $3.93 and in addition a wharfage charge of 1 cent per 100 pounds has been assessed.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
High brass	18.87½
Copper, hot rolled	22.50
Zinc, (100-pound base)	11.75
Lead full sheets (cut ¼c more)	11.75 to 12.25
Aluminum, bright flat, up to 10 gage	36.50
SEAMLESS TUBES	
High brass	23.75
Copper	24.50
RODS	
High brass (round ⅝ to 2½-inch)	16.62½
Naval brass	19.37½
WIRE	
Copper, small lots	16.00
High brass	19.37½

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	8.50 to 8.75
Chicago	8.75 to 9.00
Cleveland	9.25
HEAVY YELLOW BRASS	
Chicago	7.50 to 7.75
Cleveland	7.25
ZINC	
New York	4.25
Cleveland	4.25
HEAVY COPPER AND WIRE	
New York	11.50 to 11.75
Chicago	10.25 to 11.00
Cleveland	11.25
RED BRASS BORINGS	
New York	8.00 to 8.25
YELLOW BRASS TUBING	
Cleveland	7.25
LIGHT COPPER	
New York	9.25 to 9.50
Chicago	9.25 to 9.50
Cleveland	9.75
LIGHT BRASS	
Chicago	6.75 to 7.00
Cleveland	5.75
ALUMINUM	
Clippings	21.00
Borings, Cleveland	14.00
Cast	18.50

Secondary Metals

Remelt aluminum No. 12	22.50 to 23.00
Brass ingot, 85-5-5-5	12.00

Coke By-Products

Naphthalene Prices Easier—Steel Output Decline Is Strengthening Factor

New York, Nov. 9.—Naphthalene has eased off, flakes now holding at 5 to 7 cents, and balls at 6 to 8 cents. This compares with recent prices of 6 to 7 cents for flakes and 7 to 8 cents for balls, and follows a period of listless trading.

Distillates are in active demand, and while the recently slight falling off in steel production has not affected the output of distillates, it nevertheless is a strengthening factor, with the result prices are strong at prevailing levels. Pure and 90 per cent benzols are holding at 24 cents works, per gallon for material in tank car lots and 29 cents, in drums; toluol and solvent naphtha, 35 cents, works, in tanks, and 40 cents in drums; and commercial xylol, 36 cents, works in tanks, and 41 cents in drums.

Sulphate of ammonia also is unchanged at $2.45 to $2.50, delivered, for material for domestic account and $2.45 to $2.50, port, for material in double bags for export. With current trading slack, these prices are largely nominal. The fact that there has been no falling off, even in a nominal way, is attributed to heavy shipments against back orders, which are holding stocks to a low volume.

Coke Oven By-Products

Per Gallon at Producers' Plants in Tank Lots

	Spot	Contract
Pure benzol	$0.24	.....
90 per cent benzol	0.24	.....
Toluol	0.35	.....
Solvent naphtha	0.35	(nominal)
Commercial xylol	0.36	(nominal)
Phenol	0.22	0.22

Per Pound at Producers' Plants

Naphthalene flakes	0.05 to 0.07
Naphthalene balls	0.06 to 0.08

Per 100 Pounds Delivered

Sulphate of ammonia	2.47½	.....

Warehouse

Demand Generally Slowing Despite Occasional Bright Spots—Some Variations in Prices Beginning to Appear

SEASONAL slowing of demand in the iron and steel warehouse markets is more noticeable. Bright spots occasionally appear, such as in New York and St. Louis last week where buying increased. Variations in prices are beginning to appear. Swedish steel for New York delivery was advanced last week. Blue annealed sheet prices are weaker at Cincinnati.

From all appearances, Pittsburgh warehouse operators will round out 1926 with good business. Demand is holding up well for most lines, particularly hot rolled merchant bars and concrete bars. Sheet orders are numerous.

Continuation of the October rate of buying marks the first week of warehouse buying in November in the Cleveland district. Good weather is an added stimulant to building products demand. Prices are firm for local trading.

Jobbing demand in the New York metropolitan district has revived from the slump of a week ago. Improvement is notable especially in galvanized sheets for both domestic and export consumption. Of unusual interest is the placing of an order with a local jobber for 130 tons of galvanized corrugated sheets for Havana, Cuba, for temporary construction work following the recent hurricane. This is one of the largest orders ever to be filled out of warehouse stock. Reflecting the coal situation abroad, Swedish iron bars have recently undergone an advance, rounds now being quoted at 6.25c and flats and squares at 6.50c. Swedish hollow drill steel is unchanged at 15.00c for small quantities out of warehouse. Domestic prices are strong, but unchanged.

Buffalo warehouse sales of iron and steel are slowing up somewhat and the usual gradual downward curve apparently is in prospect until the end of the year. Galvanized sheet demand is an exceptioon. Structural business the past 30 days was the best for this year.

With few orders, competition for warehouse business in the Cincinnati district is keen. Reports are current that jobbers are shading blue annealed sheets since the mill price has

(*Concluded on Page* 1267)

Quotations in Cents Per Pound at Leading Market Centers

STEEL BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.15c
Ft. Worth	3.75c
Los Angeles	3.30c
New York	3.24c
Philadelphia	2.90c to 3.20c
Pittsburgh	2.90c
Portland	3.00c
San Francisco	3.30c
Seattle	3.00c
St. Louis	3.15c
St. Paul	3.25c
Tulsa	3.80c to 4.06c

IRON BARS

Boston	3.265
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.15c
Ft. Worth	3.75c
New York	3.24c
Philadelphia	2.90c to 3.20c
St. Louis	3.15c
Tulsa	3.80c to 4.06c

REINFORCING BARS

Boston	3.265 to 3.50c
Buffalo	3.30c
Chicago, billet	2.25c to 2.60c
Chicago rail steel	2.00c
Cincinnati	3.20c to 3.30c
Cleveland	2.50c to 3.00c
Detroit	3.15c
Ft. Worth	3.75c
Los Angeles, C.L.	3.05c
Los Angeles, L. C. L.	3.30c
New York	3.15c
Philadelphia	3.00c to 3.15c
Pittsburgh	2.50c to 2.60c
San Francisco, C. L.	2.30c
San Francisco, L C. L.	2.45c
Seattle	3.00c
St. Louis	3.15c
Tulsa	3.75c to 4.00c
Youngstown	2.50c to 2.60c

STANDARD STRUCTURAL SHAPES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.25c
Ft. Worth	4.50c
Los Angeles	3.20c
New York	3.34c
Philadelphia	2.75c to 3.20c
Pittsburgh	3.00c
Portland	3.10c
San Francisco	3.30c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.80c to 4.16c

PLATES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-inch and thicker	3.00c
Cleveland, 3/16-inch	3.225c
Detroit	3.25c
Detroit, 3/16-inch	3.45c
Ft. Worth	4.50c
Los Angeles	3.20c
New York (sheared and universal)	3.34c
New York (floor)	5.25c
Philadelphia	2.75c to 3.20c
Philadelphia, 3/16-inch	2.95c to 3.40c
Pittsburgh	3.00c
Portland	3.25c
San Francisco	3.30c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.25c
Tulsa	3.80c to 4.16c

NO. 10 BLUE ANNEALED SHEETS

Boston 3/16-inch	3.915c
Buffalo	3.80c
Chicago	3.50c
Cincinnati	3.60c
Cleveland	3.25c
Detroit	3.65c
Los Angeles	4.00c
New York	3.89c
Portland	4.25c
Philadelphia	3.50c
Pittsburgh	3.40c
San Francisco	4.00c
Seattle	4.25c
St. Louis	3.60c
St. Paul	3.75c
Tulsa	4.05c to 4.75c

NO. 24 BLACK SHEETS

Boston	5.10c
Buffalo	4.30c
Chicago	3.95c
Cincinnati	4.05c
Cleveland	3.80c
Detroit	4.10c
Ft. Worth	4.70c
Los Angeles	5.00c
New York	4.35c
Philadelphia	4.35c
Pittsburgh	3.95c
Portland	4.90c
San Francisco	4.90c
Seattle	4.90c
St. Louis	4.45c
St. Paul	4.20c
Tulsa, No. 28	5.00c

NO. 24 GALVANIZED SHEETS

Boston	5.80c
Buffalo	5.15c
Chicago	4.80c
Cincinnati	4.90c
Cleveland	4.65c
Detroit	5.05c
Ft. Worth	5.90c
Los Angeles	5.75c
New York	5.10c
Philadelphia	5.30c
Pittsburgh	4.80c
Portland	5.75c
San Francisco	5.65c
Seattle	5.75c
St. Louis	5.25c
St. Paul	5.15c
Tulsa, No. 28	6.00 to 6.31c

BANDS

Boston	4.015c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.80c
Ft. Worth	4.40c
Los Angeles	4.05c
New York	3.99c
Philadelphia	3.75c to 3.90c
Pittsburgh	3.60c
Portland	4.25c
San Francisco	4.15c
Seattle	4.00c
St. Paul	3.90c
Tulsa	4.71c

HOOPS

Boston	5.50c
Buffalo	4.05c
Chicago	4.15c
Cleveland	3.65c
Detroit	4.30c
New York	4.49c
Philadelphia	4.00c to 4.25c
Pittsburgh	4.50c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds and hexagons	Flats and squares
Boston	4.05c	4.55c
Buffalo	3.90c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.90c	4.40c
Detroit	3.85c	4.35c
Los Angeles	5.25c*	.....
New York	4.00c	4.50c
Philadelphia	4.00c	4.50c
Pittsburgh	3.60c	4.10c
Portland	5.00c*	.....
San Francisco	4.25c*	.....
Seattle	5.00c*	.....
St. Paul	3.85c	.....
Tulsa	4.66c	5.16c

*Rounds only.

COLD ROLLED STRIP

Boston, 0.100 inch, 500 lbs. lots	6.15c
Buffalo	6.25c
Chicago	6.25c
Cincinnati	7.15c
Cleveland, over 500 lbs. lots	5.95c
Detroit	6.20c
New York	6.25c
Philadelphia	6.25c
Pittsburgh	6.30c

FOREIGN IRON AND STEEL

New York duty paid

Swedish, hollow drill steel	15.00c
Swedish iron bars round	6.25c
Flats and squares	6.50c

WELDED PIPE

Discounts from warehouse, New York City Standard Steel Pipe

WROUGHT STEEL PIPE

	Black	Galvanized
⅛-inch butt	—28	+21
¼ to ⅜-inch butt	—36	— 3
½-inch butt	—46	—29
¾-inch butt	—51	—37
1 to 3-inch butt	—53	—39
2-inch lap	—40	—22
2½ to 6-inch lap	—48	—35
7 and 8-inch lap	—44	—17
9 and 10-inch lap	—38	—14
11 and 12-inch lap	—37	—12

WROUGHT IRON PIPE

	Black	Galvanized
¼ to ⅜-inch butt	+44%	+78%
½-inch butt	— 4	+19
¾-inch butt	— 1	+ 9
1 to 1½-inch butt	—14	+ 6
2-inch lap	— 5	+14
2½-inch lap	— 9	+ 6
3 to 6-inch lap	— 3	+ 6
7 to 12-inch lap	— 3	+16

Coast Trade Is Slower

Plates and Structural Shapes Most Active—Prices Are Well Maintained—Some Imported Material Continues To Arrive

SAN FRANCISCO, Nov. 6.—(*By Air Mail*)—Activity in Pacific Coast iron and steel markets this week has slowed somewhat and few inquiries developed during the week. The structural steel shape and plate market was the most active and some fair tonnages were placed. While prices in most lines are well maintained, out-of-stock prices on reinforcing bars in the San Francisco district especially are weak.

Pig Iron and Coke

Jobbing foundries continue to operate on small schedules and sales of pig iron and coke have been light. No large lots of pig iron were reported booked this week, sales involving only carload lots for prompt shipment. About 100 tons of India iron arrived in the Port of Los Angeles this week. The Southern Pacific Co. has placed 1000 tons of foundry coke with an importer of German material. Due to shortage of vessels plying in the European-Pacific route, coke is becoming difficult to obtain.

Coast Pig Iron Prices

Utah basic	$25.00 to 26.00
Utah Foundry	25.00 to 26.00
*German	24.25
*Indian	25.00
*Dutch	22.00

*C.i.f. duty paid.

Bars, Plates and Shapes

Action on the Western Harvester Co. inquiry for 600 tons of hot rolled material is still pending though it is thought local producers will obtain the order. Most merchant bar orders call for small lots and numerous sizes. Awards of concrete bars this week totaled 950 tons and included 250 tons for the Crane Co. warehouse in San Francisco, 200 tons for the Hearst-Moulder school, San Francisco, 125 tons for a high school in Richmond and 100 tons for a theater in Marysville. Pending business calls for over 5000 tons. The only new inquiry of the week involves 150 tons for an auto building in San Francisco.

Awards of plates during the week aggregated 1600 tons. The Vancouver Engineering Co. booked 1100 tons for a pipe line for Vancouver and the Pacific Coast Engineering Co. booked 500 tons for dredge and pontoon pipe for several interests. The Associated Oil Co. has taken no action on its inquiry for 620 tons for two 80,000-barrel tanks and the Shell Oil Co. inquiry for nine 45,000-barrel tanks calling for 1800 tons is still pending. Pending business exceeds 13,000 tons. The largest new inquiry will require 375 tons for the Rockridge siphon of the East Bay municipal utility district, Oakland, bids on which will be opened Dec. 12. Prices continue firm at 2.30c c.i.f. as a minimum.

During the week over 3600 tons of structural shape awards were placed. The McClintic-Marshall Co. took 1800 tons for the May garage in Los Angeles, Llewellyn Iron Works booked 1100 tons for the Braun building Alhambra, the Pacific Coast Engineering Co. took 430 tons for a high school at Richmond and the Pacific Rolling Mill Co. was awarded 350 tons for a power house for the Great for a power house for the Great Western Power Co. While over 17,000 tons are up for figures or pending, new inquiries of the week included only two projects. The Builders Exchange building, San Francisco, will require 1400 tons and an addition to a department store in Berkeley will take 200 tons. Prices on domestic material are firm at 2.35c c.i.f. Foreign material is being sold about $10 a ton under domestic material. The differential is not attractive enough to warrant heavy purchases as buyers must accept bessemer steel and must order in much larger quantities than is the case when domestic shapes are used.

Other Finished Material

A railroad in Los Angeles has placed 1000 tons of girder rails with an eastern mill. No other sales of track material were reported and inquiries current involve small tonnages only.

Only one cast iron pipe award was reported this week. The United States Cast Iron Pipe & Foundry Co. was awarded 700 tons for Long Beach, Calif. D. A. Power was low bidder on the general contract for 335 tons for Wenatchee, Wash., and United States Cast Iron Pipe & Foundry Co. was low bidder on 100 tons for Sacramento. Pending business calls for over 2500 tons. New inquiries include 500 tons for Seattle and 100 tons for San Diego. Grinnell Co. took 360 tons of 6-inch welded pipe for Los Angeles. The Western Harvester Co. has placed 140 tons of line pipe with an unnamed eastern producer. The inquiry of the Pacific Gas & Electric Co. for 638 tons has been withdrawn.

A San Francisco jobber has placed 400 tons of wire nails with an eastern mill. Demand for wire products generally is considered fair and the total tonnage being placed aggregates a fair total.

Imports at Philadelphia in the week ending Nov. 6 included 2150 tons of pig iron from Germany, 474 tons of structural steel from Belgium and 16 tons of wire rods from Sweden.

Declare Mine Disaster Was Unavoidable

Following the disaster at the Cleveland-Cliffs Iron Co.'s Barnes-Hecker mine, near Ishpeming, Mich., in which 50 miners were killed last week, representatives of 25 other mining companies in the Lake Superior district held a conference in that city Nov. 5 to advise with the Cleveland-Cliffs company. W. P. Kelly, representing the bureau of mines, was chairman. A committee of 12 made an investigation, and submitted a report which was approved by the conference. In the report it was said:

"It was found that that part of North lake that could have affected the Barnes-Hecker mine had been drained and all surface drainage led away from the mining area by expensive ditching. The map of the underground workings were carefully examined and the history of the property and its operations from the beginning to the present time was given consideration.

"From this inspection and study it is our judgment that the mine was operated according to the best mining practice, and that all care possible was taken by the mining company to safe-guard its employes, and that the accident was due to causes that could not have been foreseen. It is the opinion of the committee that every man in the mine was buried and met death almost immediately, and that rescue work was impossible, as the mine workings were completely filled with water, sand and mud in a few minutes. The work undertaken by the Cleveland-Cliffs company to recover the bodies has been everything that could have been done and the methods were the only means possible."

French Competition Gains

Washington, Nov. 9.—French competition for machinery trade is strengthening. According to the industrial machinery division of the department of commerce, France imported 50,000 metric tons less machinery in 1925 than in 1913, a drop of 40 per cent. It exported 50,000 tons more, a gain of 185 per cent. Present metalworking machinery production in France is estimated as more than three times what it was in 1913. It has become increasingly difficult for American manufacturers of the simpler types of metalworking equipment to compete for French markets. There has been an increase, however, in French purchases of the more specialized machines of American build.

Countervailing Duty Is Linked with Dumping

Washington, Nov. 9.—It is possible no announcement will be made by the customs service in connection with a countervailing duty on German iron and steel products coming into the United States until the government is ready to make some announcement relative to the dumping of these products on the American market from Germany. This is a new angle of the situation that has just developed. Up to this time it had been thought that officials of the custom service were thinking of the two cases as distinct and separate.

Information is understood to have reached government officials here that the trade feels that the report of the mixed commission in itself indicates dumping. Of course the custom service has been engaged for some months in its dumping investigation of iron and steel products from Germany but this has not yet been completed and there is no way of knowing at this time when it will be finished.

It is believed here that before any final dumping or nondumping decision can be reached the custom service will have to hold a hearing here on the subject inasmuch as if the decision is against either the importers or the domestic manufacturers, each will want a chance to present their case. Indications are it will be some time before any official announcement will be ready. It is believed here now that the department will issue its dumping or nondumping order and that in the same statement it will dismiss or place a countervailing duty on the products coming into the country. There seems to be a feeling among those in authority that the countervailing duty will not be placed but that dumping will be found.

Industrial Machinery Exports Still Gain

United States exports of industrial machinery during the month of September reached a total of $14,391,358, representing the largest volume for any month thus far in 1926, with the exception of April, which stands as the record month since 1921. These exports for September contrast with $12,254,380 for the corresponding month of 1925, and $11,830,610 for August, 1926.

It is encouraging to note that the volume of American industrial machinery exports has been rising steadily since 1921 and that this progress is being maintained during the present year. The monthly average of these shipments during the first nine months of 1926 amounts to roughly $12,988,000 as compared with less than $12,500,000 for the 12 months of 1925.

P. W. O'Brien Dies

Chicago, Nov. 9.—P. W. O'Brien, assistant sales manager of the Illinois Steel Co. and a leading figure for many years in the iron and steel industry here, died today. He had been ill only a week.

Issues Publication

Hydraulic Press Mfg. Co., Columbus, O., announces the first issue of a new quarterly publication to be known as "The Hydraulic Press." The purpose of the publication will be to show typical installations of hydraulic equipment and their direct application to the problems of plants using it. A consulting service for interested manufacturers will be conducted by the editors. Articles of wide general interest as well as specific application will appear and each subject will be treated from the standpoint of the most advanced hydraulic engineering experience. The first issue contains 16 pages and is well illustrated.

Pig Iron Prices Stronger

(*Concluded from Page* 1253)

melters were larger than in several weeks, approximating 5000 tons. A Cleveland furnace is practically sold up through February, and after booking numerous orders here in the past week advanced its price $1 to $21, base, furnace, for delivery in the 50-cent switching area. The delivered price is 25 cents under the delivered price of iron from the valley at $20, base valley. Another local producer advanced its price 50 cents to $20.50, base, furnace, for delivery in the Cleveland area. Both of these makers have made similar increases for outside shipments, $19.50 to $20, base, furnace, representing the general level. Lake furnaces are quoting prices 50 cents higher than a week ago, $20.50 to $21, base, for delivery in Michigan, and $20, base, for western Ohio and Indiana.

Cincinnati, Nov. 9.—A leading producer in the Ironton district has advanced its price to $20.50, base, for first quater delivery. Another maker sold 1000 of the foundry grade to a Pomeroy, O., melter for first quarter at $20, base, Ironton. It was explained that the tonnage was sold at that price because of associated interests. Ross-Meehan Foundries Inc., Chattanooga, Tenn., placed an order with a central Ohio producer for Wagner Mfg. Co., Sidney, O., closed 300 tons of malleable, while with a lake furnace for 500 tons of northern foundry which involves shipment into next year. The sale of 500 tons of high silicon silvery iron to Ford Motor Co., is noted. Northern foundry iron ranges from $20 to $20.50, Ironton, while southern is firm at $20.

Chicago, Nov. 9.—While buyers of northern No. 2 foundry and malleable pig iron are interested keenly in first quarter and first half contracts, it is doubtful whether the scarcity of coke in the East is sustaining any well defined buying movement aside from the steady business of the past few months. The melt in Chicago districts is holding up to the rate of October. Considerable inquiry for foundry iron is coming from northern and central Illinois, Iowa and southern Wisconsin. Sales of 500 to 1000-ton lots are being made in finishing out fourth quarter requirements. Few hold-up orders are being received. Shipments thus far in November are practically equivalent to October.

St. Louis, Nov. 9.—Demand for all continues active. The week's sales totaled more than 32,000 tons, for the remainder of this quarter and the first quarter. Radiator manufacturers' purchases amounted to approximately 15,000 tons. One lot of 2000 tons was taken by an Illinois melter. A car builder in this district purchased 2500 tons, 1000 tons of basic iron was purchased by a west-side steel manufacturer. Prices are steady.

Birmingham, Ala., Nov. 9.—While hand-to-mouth buying is noted in the pig iron market, furnace interests in Alabama have good order books for the remainder of the year. New business now promises to absorb the remainder of the probable make and also some surplus stock. Quotations are firm at $20 for No. 2 foundry. Steel mills are requiring much basic iron, and more furnaces are on this grade than are on foundry iron.

Warehouse Sales Spotty

(*Concluded from Page* 1265)

sagged to 2.30c. Structural and reinforcing bars appear to be the most active items. Bands and plates are quiet, while tubes have been reduced about 5 per cent in price.

St. Louis warehouse business has increased slightly since Nov. 1, compared with the closing week of October.

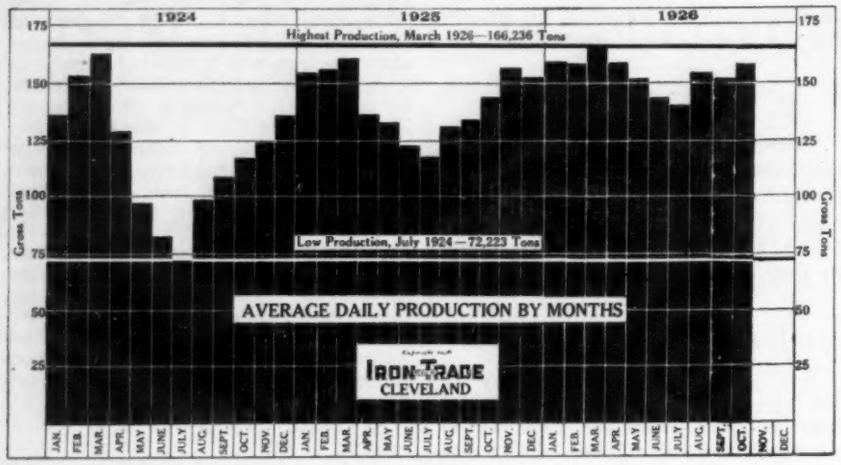
Demand for sheets is quite brisk, particularly galvanized and blue annealed.

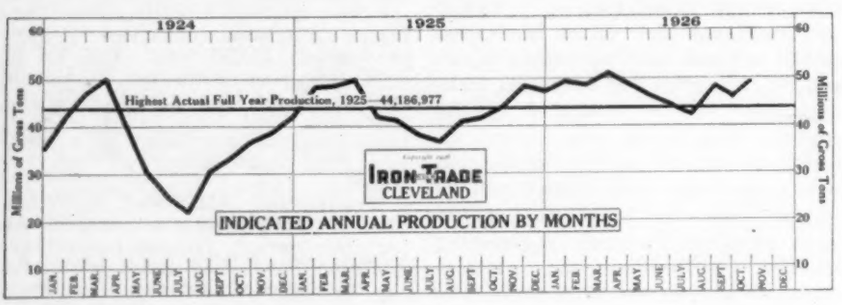
The Detroit iron and steel warehouse situation continues satisfactory. Operators report demand holding up well for this season. While curtailed tonnage is looked for to the end of December, fair volume is expected.

Shading of steel bars is more marked in the Philadelphia warehouse trade. Sales are more frequent at 2.90c, base, delivered locally. Some shading on sheets is noted but this is rather exceptional. The volume of business compares favorably with October.

In 1821 Berthier discovered the properties of chromium steel. Experiments of Berzelium in 1829 developed an alloy containing nickel, zinc, chromium and tin, which he termed meteor steel.

October Ingots at High Rate





AFTER a recession in September, production of steel ingots in October made a strong gain and went to a level which was the highest since last April, the month following the all-time record established in March. During the month just passed both total output and daily rate were the best for any October on record. According to statistics compiled by the American Iron and Steel institute from figures reported by companies which in 1925 made 94.5 per cent of the country's total, the October production was 4,092,548 gross tons. Against the 3,930,675 tons of the preceding month, this was a gain of 161,873 tons, or 4.12 per cent. Both October and September were months of 26 working days. In April 4,123,941 tons were made.

Average daily production in October was 157,406 tons per day, which compared with the 151,180-ton daily rate of the month before, was an increase of 6226 tons per day. Last April the rate was 158,613 tons per day. On the basis of 157,406 tons per day in October and 311 working days in the year, the indicated annual rate of production was 48,950,000 tons. For September, the indicated annual rate was 47,000,000 tons. Based upon the country's theoretical ingot capacity of 55,844,033 gross tons as of Dec. 31, 1925, operations in October represented 87.66 per cent, against 84.19 per cent in September.

For the first ten months of 1926, production totaled 39,939,398 tons, while for the corresponding period of last year the total was 36,266,920 tons. Average daily production so far this year has been 154,206 tons, against 139,488 tons for the ten months of last year. Operations have averaged 85.88 per cent of capacity.

Steel Ingot Production—1925-26

94.5 Per Cent of Industry Reporting

Gross Tons

1925	Open-hearth	Bessemer	All other	Monthly output companies reporting	Calculated monthly output all companies	No. of working days	Approximate daily output all companies	Change in daily rate per cent
Jan.	3,263,256	689,996	11,960	3,965,212	4,193,281	27	155,307	+13.1
Feb.	2,933,225	602,042	12,998	3,548,265	3,752,352	24	156,348	+ 0.6
Mar.	3,337,721	614,860	13,633	3,966,214	4,194,340	26	161,321	+ 3.1
Apr.	2,858,866	515,715	14,182	3,388,763	3,583,676	26	137,834	—14.5
May	2,755,561	497,708	13,790	3,267,059	3,454,971	26	132,883	— 3.6
June	2,540,729	476,945	12,490	3,030,164	3,204,451	26	123,248	— 7.2
July	2,446,068	457,095	13,547	2,916,710	3,084,472	26	118,634	— 3.7
Aug.	2,698,285	523,734	12,914	3,234,933	3,420,998	26	131,577	+10.9
Sept.	2,738,673	547,121	13,977	3,299,771	3,489,565	26	134,214	+ 2.0
Oct.	3,077,114	584,567	15,624	3,677,305	3,888,814	27	144,030	+ 7.3
10 mos.	28,649,498	5,509,783	135,115	34,294,396	36,266,920	260	139,488	
Nov.	3,092,194	581,347	17,085	3,690,626	3,902,900	25	156,116	+ 8.4
Dec.	3,169,796	569,304	15,843	3,754,943	3,970,918	26	152,728	— 2.1
Total	34,911,488	6,660,434	168,043	41,739,965	44,140,738	311	141,932	
1926								
Jan.	3,326,846	581,683	13,664	3,922,193	4,150,469	26	159,633	+ 4.5
Feb.	3,023,829	556,031	12,818	3,592,678	3,801,776	24	158,407	— 0.8
Mar.	3,590,791	635,680	15,031	4,241,502	4,488,362	27	166,236	+ 4.9
Apr.	3,282,435	601,037	13,652	3,897,124	4,123,941	26	158,613	— 4.5
May	3,201,230	516,676	10,437	3,728,343	3,945,336	26	151,744	— 4.3
June	3,036,162	498,764	9,441	3,544,367	3,750,653	26	144,256	— 4.9
July	2,911,375	526,500	12,372	3,450,247	3,651,055	26	140,425	— 2.6
Aug.	3,145,055	627,273	12,003	3,784,331	4,004,583	26	154,022	+ 9.7
Sept.	3,089,240	612,588	12,660	3,714,488	3,930,675	26	151,180	— 1.8
Oct.	3,224,584	630,526	12,348	3,867,458	4,092,548	26	157,406	+ 4.1
10 mos.	31,831,547	5,786,758	124,426	37,742,731	39,939,398	259	154,206	

Buys Heating Furnaces

Contracts for three continuous recuperative reheating furnaces have been let to the Chapman-Stein Furnace Co., Mt. Vernon, O. by the Weirton Steel Co. for installation at the company's new strip-sheet mill at Weirton, W. Va. The furnaces will be of the end-charge, end-discharge type and will have a normal capacity of 20 tons an hour each. They will be designed to heat slabs 5 feet long, 3 feet wide and 3 inches thick. Each furnace will have an approximate overall length of 70 feet and a width of 15 feet. They will be built with a suspended flat arch and will use producer gas for fuel. The split-flame type of firing will be applied with a cinder pit thus eliminating many hearth difficulties and frequent repairs. It is expected the new mill wil be ready for operation next April. In recent months the Chapman-Stein Furnace Co. has obtained contracts for 31 large continuous furnaces many of which now are in successful operation.

Interstate commerce commission has permitted Central Alloy Steel Corp. and Peoria, Ill., association of commerce to intervene in the case of Inland Steel Co. against Akron, Canton, & Youngstown railroad.

Steel Entente Door Left Open

Official Text of European Agreement Reveals Withdrawals and Accessions Have Been Made Easy—Experimental Stage Lasts Till Nearly 1929—Accord Hinges Somewhat on Tariffs

By Vincent Delport
European Manager, Iron Trade Review

LONDON, Nov. 2.—Ample opportunity for withdrawal from the international steel entente signed at Brussels, Sept. 30, by France, Belgium, Germany and Luxemburg, is revealed by the abridged official text which is given herewith. In fact, until May 1, 1929, any of the signatory nations may declare their intention of going their own way after Oct. 31 of that year. Likewise, the entrance of other nations has been made simple.

As evidenced by article 10, tarffs play an important role. If a participating country finds itself in an unfavorable position in relation to other participating countries or from a general commerical point of view, this is adequate reason for withdrawing. It is recalled that during the negotations it was said Germany would come in only if a commercial agreement between it and France were possible. France seems to have conceded Germany this point; likewise Germany has agreed that its tariff on iron and steel products will not be increased.

Following is an abridged but authentic translation of the pact:

Article 1

Each country will contribute to a common fund $1 per month for each ton of raw steel actually produced.

The term "raw steel" covers the total tonnage of raw steel produced in the participating countries by the basic bessemer, acid bessemer and open-hearth processes, crucible steel, electric steel or any other process.

(Then follows a description of the manner in which the payments will be effected).

Article 2

The common fund will be controlled by a directing committee of four permanent members respectively designated by each of the participating nations, Germany, Belgium, France and Luxemburg. Each of these four participating countries will also designate two additional members who will take the place of the permanent member in case the latter should be prevented from officiating through absence.

Each year the directing committee will be presided over in rotation by a representative of each of the participating nations.

In a general way and in addition to the special duties mentioned in the above articles the directing committee will take proper means to ensure the execution of the clauses of the present agreement and will see that the controls implicated by this agreement are effected. The directing committee is also entrusted with the administration, the control and the keeping of the amounts paid into the common fund.

The voting power of each member of the directing committee is proportionate to the quota of the country which the member represents.

Article 3

Each quarter the directing committee will fix the quota of each country according to the regulations of article 4. This will be done, at the latest 15 days before the beginning of the corresponding quarter, by the application of coefficients which are agreed upon once and for all for each country. These coefficients will apply to the total tonnage adequate for the probable requirements of the market.

Article 4

The coefficients which are prescribed to each participating country can only be modified on a unanimous vote.

The total quarterly tonnage on which the quota of each country will rely will be fixed by a majority of votes of three-quarters, each country having a number of votes proportionate to its participation, with the restriction that if every country with the exception of one votes in the same direction this will be considered a sufficient majority, even if the dissenting country represents more than a quarter of the votes.

The Saar territory will never vote individually, but its votes will be divided between France and Germany in the proportion of one-third and two-thirds respectively.

Article 5

Each month the actual production of raw steel of each country will be recorded in comparison with the tonnage alloted to each participant.

If the quarterly output of one country exceeds the quota to which it is entitled, this country will pay a contribution of $4 for each ton in excess. This contribution will be paid into the common fund independent of the subscription fixed by article 1.

Article 7

If the output of one country does not reach the quota to which it is entitled, this country will receive from the common fund a compensation of $2 for each ton short.

However, the tonnage to which such a compensation applies cannot exceed 10 per cent of the quota which has been fixed for the corresponding period of three months. If a shortage of 10 per cent or more on the corresponding quarter persists during a successive period of three months the tonnage to which the compensation will apply will be decreased by 2 per cent for each successive quarter. Thus during the second quarter in which there would be shortage of 10 per cent or more the compensation will only be paid on a tonnage corresponding to 8 per cent; during the third quarter it would only correspond to 6 per cent, and so on.

In case of force majeure the general assembly of the various groups will decide by a majority of votes the amount of compensation.

Article 8

Accounts will be made every three months. The penalties and compensations mentioned in articles 6 and 7 will be payable as soon as the accounts are closed.

At the end of each period of three months the balance of funds remaining after having deducted overhead expenses will be divided between the participating nations; first, in proportion to the actual production during the period covered by the accounts up to the amount paid in as ordinary subscriptions, in accordance with article 1. Second, in proportion to the

Rail Pact Is Not Signed

LONDON, Nov. 2.—The European Rail Makers' association frequently referred to as ERMA, continues to operate provisionally. It was expected that Belgium, France, Germany, Great Britain and Luxemburg would officially sign the agreement at the recent meeting in London but a last-minute hitch held Germany back.

German rail manufacturers believe the tonnage which they furnish to certain continental markets should not be included in its entirety in their quota. French producers are said to fear that certain Balkan states with which France is friendly would be put to disadvantage, as practically all the rails now furnished by Germany on reparations account go to the Balkans. Complete protection of their home market is also sought by the Germans.

Apparently producers of other nations differ with the German rail interests. The difficulties on account of Great Britain's desire to retain certain freedom in colonial and dominion makets are said to have been met. The association will meet again at a date not determined.

quotas enforced during the period covered by the accounts where there exists a balance originating from excess of penalties over compensations.

The first settlement will take place on April 1, 1927.

Article 9

The present agreement will terminate on April 1, 1931. However, up to May 1, 1929, a country will be entitled to give notice that it intends to withdraw on Oct. 31, 1929, and in this case the other countries will be free to conclude relations the same date.

Article 10

The present agreement has been arrived at with the thought that during its existence the tariffs applied to iron and steel imported into Germany should not be increased. If Germany did increase these tariffs each participating nation may withdraw three months after having given notice, and it is understood that in such a case each country will enjoy full liberty to establish its own tariff.

Furthermore, the present agreement can be denounced at any moment from April 1, 1927, and would terminate three months after notice has been given if the government of one of the participating countries were to oppose the agreement on the ground that no commercial treaty being in existence the said country would be in an unfavorable position in respect to its commodities.

If Germany or France denounced the present agreement owing to one of the two causes mentioned above, they would also denounce the contract with regard to other countries and these could also denounce inter se.

Article 11

The transfer of production quotas between countries would only be allowed for one concern if this concern owns or exploits producing plant in another country. Ownership will be considered effective if 40 per cent of the share capital at least of the said producing plant is the property of the concern in question.

Such a transfer will be notified in advance to the directing committee. The transfer can only become effective at the beginning of the quarter following that when notice has been given and must apply at least to the whole duration of that period.

Article 12

If on April 1, 1927, the total consumption has not increased in such a way that the Luxemburg group is entitled to a tonnage corresponding to an annual minimum output of 2,360,000 metric tons, and if on April 1, 1929, this minimum tonnage does not attain 2,480,000 tons, the Luxemburg group will be entitled to withdraw from the entente after having given three months' notice. The other countries will then also be entitled to withdraw.

Article 13

All disputes arising from the interpretation and execution of the present agreement must be settled by arbitration.

Article 14

The present agreement remains open to the steel producers of other European countries.

Admittance will be pronounced by the general assembly; first, at the majority of votes if the quota of the incoming country is based on the output of the first quarter of 1926, second, by unanimity if the admittance is regulated according to other principles.

If the combined quota of the participating countries as compared with the total output of the European nations during a period of six months is inferior by 5 per cent to that same quota during the first three months of 1926, the cancellation of the agreement can be required by one of the participants and become effective after three months' notice, providing notice has been given not later than three months after the aforesaid period of six months has expired.

The agreement can also be cancelled by one of the participating countries after three months' notice if the total production tonnage fixed for a period of six months is inferior to 13,139,000 tons, in which case the notice should be given in the course of one month after the tonnage of production has been fixed.

German Blast Furnaces Efficient

RECENTLY the Berlin *Vorwarts* published interesting comments on the modernizing of the German iron and steel industries. It points out that the war has caused improvement in the operation of these industries, resulting in increased output with a smaller number of furnaces and less men employed. Immediately before the war Germany, in its present boundaries, produced about 910,000 metric tons of pig iron per month with 204 blast furnace stacks operating, whereas in September, 1926 the output was 880,015 metric tons with only 90 furnaces operating. During the past period of 12 months the output per furnace increased from 7600 metric tons to about 10,000 metric tons, an increase of 33 per cent, and the number of men employed in the blast furnaces dropped from 21,000 in September, 1925, to 17,000 in September this year, or by 19 per cent, while production was increasing. A corresponding improvement is noticed in the production of steel, which during the last 12 months also rose from 900,000 metric tons per month to 1,140,000 metric tons, the number of workers employed having decreased in the meantime from 28,000 to 25,000.

It is interesting to compare these figures with those relating to Great Britain, France, Belgium and Luxemburg, taking as a basis of comparison the pig iron output during April, 1926, when the production of Great Britain was not curtailed by the coal stoppage, while Belgian production had recovered from the effects of the Charleroi steel strike. Figures were as shown on the accompanying table, in gross tons.

APRIL 1926

	Production	Number of furnaces	Output per furnace
United States	3,450,100	237	14,457
France	755,800	146	5,175
Germany	657,800	80	8,220
Great Britain	530,100	147	2,665
Belgium	283,400	53	5,345
*Luxemburg	196,500	37	5,310

*December 1925 production and number of furnaces Dec. 31.

In order to enable closer comparison the figures in the above table are all in gross tons. These figures show that from the point of view of plant efficiency the United States is far ahead of any other country, whereas in Europe, Germany is leading; France, Belgium and Luxemburg then follow on about parallel lines. Great Britain shows an output per furnace of only 3665 tons. However, it should be noted that there still are a number of small furnaces in Great Britain which continue to be operated with the object of producing pig iron of a high quality which is much valued on the continent as well as in the country of origin. Notwithstanding its high price this pig iron always finds an outlet on continental markets. However, these smaller furnaces should be considered an exception, and the feature of the figures indicated in the accompanying table is that British blast furnace stacks need a good deal of reconstruction.

A case in point is that of the Stanton Ironworks, which concern recently ordered three new blast furnace stacks from a Midland firm.

German Steel Limitation Is Reduced

Berlin, Oct. 28.—*European Staff Service*—At its recent monthly meeting in Essen the board of the ray steel union decided to reduce the limitation of production of raw steel from 30 per cent to 20 per cent.

It is reported that a new company will be constituted by the Linke-Hofmann-Lauchhammer Gesellschaft and the Vereinigte Stahlwerke under the style of Societe de y'Acierie de l'Allemagne Centrale.

End of British Strike in Sight

New Negotiations Lead to Strong Hope of Settlement in One or Two Weeks—Federation Considering Government's Proposals—Renewed Iron and Steel Output Expected To Be Largest Since War—Prices Reported at Peak

European Headquarters,
IRON TRADE REVIEW,
2-3 Caxton House, Westminster, S. W.1

LONDON, Nov. 9.—(*By Cable*)—The government is conducting negotiations for the settlement of the British coal strike. It proposes district settlements, with a national framework, maintaining a minimum basic rate and ascertaining methods previously in use. The ratio of wages to profits would be 87-13 to 85-15. The British Mining association recommends that the various districts pledge themselves, but will not sign with the Miners' federation which is considering these proposals. There are strong hopes for a settlement in one or two weeks. The number of miners at work has increased to 300,000.

British consumers are buying large tonnages of pig iron and steel on the Continent. One Birmingham importer is waiting delivery of 50,000 tons of pig iron and 70,000 tons of steel. It is generally believed that prices have reached their peak. British production after the strike is expected to exceed all records since the war. Mills are unable to meet demand for galvanized sheets. Italy is buying tin plate.

IRON TRADE REVIEW'S representative at Paris reports the export price on continental steel bars is expected to stabilize at about £5 15s ($36.30). Transactions are slowing up as the value of the franc increases. Belgian iron and steel makers are experiencing an active export demand. Berlin reports satisfactory domestic and export conditions. There is said to be a shortage of pig iron in the international market.

Much British Business Held Back by Fuel Lack

Office of IRON TRADE REVIEW.
Prince's Chambers, Corporation St.

BIRMINGHAM Eng., Nov. 4.—(*European Staff Service*)—The iron and steel position has never been more vexatious since the beginning of the strike, since orders have increased in volume, and more work than ever is in prospect. Several shipbuilding orders have been placed, including a battleship to be built by Palmer Shipbuilers Co. on the Tyne, a new Ellerman liner of 10,000 tons ordered from Swan, Hunter & Wigham Richardson, and three other vessels ranging from 8000 tons to 5900 tons placed with another firm. One pending project is an order for seven liners to introduce a fast service to Australia, the value of this being estimated at £10,000,000. One compensating effect of the strike has been a sharp rise in ship freights, as the result of the utilization of 370,000 tons of shipping of the 800,000 idle before the strike. This will be a useful plum for shipowners, which will doubtless bear fruit in ship orders for the future. Cammell Laird & Co. have booked 800 25-ton all steel bogie wagons for the Central Argentine railway. The motor trade is looking forward to a boom, following record bookings at the Show, and the Birmingham works are arranging to expand.

Sterling $4.84

Constructional engineers are nearly all as busy as they can be dealing with tenders. Their difficulties, however, are well illustrated by the experience of a Birmingham firm this week which required 70 girders for an order, and after probing every possible source of supply made up a total of 17, some of which are of unsuitable lengths, and will have to be cut down. A great deal of modifica-

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, Nov. 8	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable		£ s d		£ s d		£ s d		£ s d
PIG IRON								
Foundry No. 3, Silicon 2.50-3.00	$29.71	6 2 6*	$19.89	4 2 0	$19.89	4 2 0	$19.40	4 0 0
Basic	25.46	5 5 0	20.61	4 5 0	20.61	4 5 0	20.61	4 5 0
Basic-bessemer	27.89	5 15 0†	16 98	3 10 0	16.98	3 10 0	18.19	3 15 0
Hematite, Phosphorus 0.02-0.05	25.46	5 5 0	24.27	740*	.....	.....	21.34	4 8 0
SEMIFINISHED STEEL								
Billets	$32.74	6 15 0	$25.46	5 5 0	$25 46	5 5 0	$25.25	5 0 0
Wire rods	43.65	9 0 0	28.49	5 17 6	28.49	5 17 6	27.89	5 15 0
FINISHED STEEL								
Standard rails	$38.80	8 0 0	$29.10	6 0 0	$29.10	6 0 0	$29.10	6 0 0
Merchant bars	1.73c	8 0 0	1 24c	5 12 6	1.24c	5 12 6	1 23c	5 12 0
Structural shapes	1.46c	6 15 0	1 22c	5 11 0	1.22c	5 11 0	1.18c	5 7 0
Plates, ship, bridge and tank	1.68c	7 15 0	1.38c	6 5 0	1.38c	6 5 0	1.27c	5 15 0
Sheets, black, 24 gage	2 38c	11 0 0	2.53c	11 10 0	2.53c	11 10 0	2.31c	10 10 0
Sheets, galvanized, 24 gage, corrugated	3.79c	17 10 0	4 20c	2,800*	5.07c	3,900*	3.74c	17 0 0
Bands and strips	2 38c	11 0 0	1.51c	6 17 6	1.51c	6 17 6	1.51c	6 17 0
Plain wire, base	2 11c	9 15 0	2.40c	1,600*	1.57c	7 2 6	1.51c	6 17 0
Galvanized wire, base	2.76c	12 15 0	3.15c	2,100*	2 01c	9 5 0	1.93c	8 15 0
Wire nails, base	2.06c	9 10 0	2.70c	1,800*	1.73c	7 17 6	1.67c	7 12 0
Tin plate, base box 108 pounds	$ 5.70	1 3 6	.....	.....	.....	.....	$ 6.79	1 8 0

*Francs

Domestic Prices at Works or Furnace—Last Reported			Francs		Francs		Marks	
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$29.10	6 0 0	$19.68	600(2)	$17.51	630	$19.55	85
Basic pig iron	24 25	5 0 0	19.35	590(1)	17 38	625	20.24	88
Furnace coke	13.34	2 15 0	6.36	194	6.39	230	4.95	21.50
Billets	32 74	6 15 0	26.90	820	22 24	800	26.47	119
Standard rails	1.79c	8 5 0	1.35c	900	1 30c	1,000	1.46c	140
Merchant bars	1 87c	8 15 0	1 39c	925	1 37c	1,050	1.40c	134
Shapes	1.68c	7 15 0	1.29c	860	1 30c	1,000	1.37c	131
Plates, ship, bridge and tank	1.89c	8 15 0	1.46c	975	1.53c	1,175	1.55c	149
Sheets, black, 24 gage	2.49c	11 10 0	2 78c	1,850	2 73c	2,100	2.35c	225
Sheets, galvanized 24 gage, corrugated	3 69c	17 0 0	4.13c	2,750	5.07c	3,900	3.65c	350
Plain wire	2.11c	9 15 0	2.40c	1.600	1.95c	1,500	2 03c	195
Bands and Strips	2.38c	11 0 0	1.73c	1,150	1.56c	1,200	1.62c	155

*Middlesbrough; †Scotch foundry iron; (1) Basic-bessemer; (2) Longwy. British export furnace coke £2 15s 0d ($13.34) f. o. b. Ferromanganese £15 10s 0d ($75.18) f. o. b. German ferromanganese £15 10s 0d ($75.18) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semifinished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

tions of plans is taking place to meet emergencies. It is becoming evident that those who began the strike with good stocks of British and foreign steel, are now running short, and every day adds to the number of applications for supplies which have to be turned down.

Pig iron is a disappearing quantity. The few furnaces at work are all located in Cleveland, and have nothing to offer before December. The quoted price of £6 ($29.10) for No. 3 G. M. B. is increasingly prohibitive, and many large foundries, having to pay as much as £4 ($19.40) to £4 4s ($20.37) for Westphalian coke, have now given up the struggle. For the most part, these the detached concerns, the engineering works depending on their own foundries still finding it less injurious to pay the big prices than to close down their establishments. Occasionally, a small parcel of Scotch pig iron can be obtained from stock, and a parcel or two can be bought from North Staffordshire. Barrow pig iron is nominally unchanged, but stocks are approaching exhaustion, and users are ready to pay a premium for delivery.

There are great complaints of slow supplies from the Continent. It is possible to get an occasional cargo of French pig iron, selling in Birmingham at £5 5s ($25.46), but this, like everything else, is delayed in transit. Consumers are placing orders more freely on the Continent, now that hope of an early coal settlement has further receded. Much of this cannot be got before the new year. A Birmingham importer received this week a consignment of steel plates which had been lying on the quay at Antwerp since the middle of August. One large importer complains he has 10,000 tons of billets similarly awaitin shipment. Billets now cost £6 10s ($31.52) delivered in Birmingham and sheet bars £6 15s ($32.73). The Welsh tin plate makers or sheet rollers fortunate enough to get foreign bars have to pay £6 3s ($29.82) delivered. Rather larger quantities of finished material can be got, and this is being ordered freely although much of it cannot be received this year.

In the tin plate trade inquiries are brisk, but seldom materialize, manufacturers either demanding a high price, or declining business altogether. Occasionally consumers and merchants are willing to pay a substantial premium for guarantees of shipment. In the rare instances where prompt supplies are obtainable, the price of £1 5s ($6.06) per box is readily paid. For shipment at the end of the year the price is £1 4s ($5.82) and the few makers willing to book for delivery in the first quarter next year quote £1 3s 6d ($5.70). The price of Welsh bars remains nominally at £6 15s ($32.73) but it is very difficult to obtain deliveries.

In the galvanized sheet trade, some of the largest works have had to stop for the lack of sheet bars or fuel, or both. There is plenty of business on offer, the standard price now being £17 10s ($84.87). The demand for thick gages has improved. Three sheet works are operating in the Glasgow area utilizing foreign steel or coal. Very little is being done in Scotland, except in sheets, practically all the steelworks being closed down.

German Steel Holds Its Strength

BERLIN, Oct. 25.—(*European Staff Service*)—The firm tendency of the German iron and steel markets has been maintained and demand from consumers has continued at a fair rate. Unfilled orders are satisfactory, and while delivery for plates and universal iron is three to four weeks other products can be delivered only after three months. While the formation of syndicates between home producers is almost complete, and now also that the Austrian and Czecho-Slovakian producers are negotiating to join the European syndicate, consumers are gradually succeeding in constructing associations of their own. The association of wiremakers has finally succeeded in getting control of the exports of its members, while it is hoped that soon an association of manufacturers of cold-drawn bars may be formed. The cold-rolling mills also are negotiating for the establishment of a syndicate, and the makers of locks for safes intend to establish a syndicate. Of course, all these associations are almost without significance as compared with the syndicates of producers, but they do show the tendency of the time.

For export business prices of bars have now advanced to £5 12s ($27.15), but Great Britain has bought fair quantities at £5 10s ($26.15). South America also has been a fair buyer and even from North America some inquiries have been received, although so far they have not led to business. Demand from the Far East has diminished. Structural shapes were quoted at £5 7s ($25.95) and fair orders of wire rods were booked at £5 15s ($27.85). The interest for plates was not lively, whereas considerable quantities of sheets were sold to England and the Far East. Prices for wire have been advanced by 5s ($1.21) by the syndicate, since the demand has improved. South America in particular has been a buyer, and for barbed wire, No. 12 B. W. G., £11 15s ($57) is now quoted, whereas for barbed wire, No. 14 B. W. G., £12 17s ($62.20) and for annealed wire £7 7s ($35.55) are the current prices. Oct. 20 a meeting is to be held in Paris between Belgian, German, Dutch and some leading French producers of wire products. The interest of Japan for thin galvanized wire is limited and the price of £9 ($43.60) fixed by the syndicate is underbidden by about 5s ($1.21).

The situation in pig iron also has improved, but producers, prices, as well as those of finished steel in the domestic market, remain unchanged. American agencies of the pig iron syndicate have been recently advised to increase their quotations to the American prices. It is worth mentioning that pig iron output in September was increased to 880,050 metric tons, against 850,208 tons in August, since 90 furnaces now are in blast against 84 during past months. However, foundries are not yet active, but stocks of pig iron in this country are greatly reduced, as foreign sales, especially those to the United States, have improved.

Ferromanganese during recent months has gradually been increased to £15 10s ($75.10), but the market is again quiet as most consumers are covered until the end of the year. The struggle between the Upper Silesian Friedenshutte and producers in England, Germany, and Norway, who are connected by a price agreement, has now ended, since the Friedenshutte is confining its sales to Poland, where it is protected by an import duty against foreign competition.

Sidney F. Strongin has been appointed receiver in equity of the J. Cutler Iron Works Inc., Brooklyn.

Belgian Output Lower

Brussels, Oct. 25.—(*European Staff Service*)—Output of pig iron in Belgium during September was 312,880 metric tons, compared with 318,390 tons in August when the highest mark was reached. The number of furnaces operating Sept. 30 was 55, the same as Aug. 31. Output of steel ingots and castings in September was 312,480 metric tons, against 317,860 tons in August when the highest mark was reached. September tonnage included 304,790 tons of steel ingots and 7690 tons of steel castings. Output of steel castings in September was the highest ever reached.

Production of finished steel in September was 256,950 metric tons, compared with 257,950 tons, which was the highest mark, reached in the preceding month. Manufacture of furnace coke in Belgium for September was 423,500 metric tons, against 455,960 tons in August when the highest mark was attained. The following gives figures for the first three quarters of this year, compared with the monthly averages of the three preceding years and 1913 in metric tons:

Mon. ave	Coke	Pig iron	Steel ingots and castings	Finished steel
1913	293,585	207,055	205,550	154,820
1923	348,330	178,995	191,410	161,950
1924	346,650	234,000	238,380	198,115
1925	342,360	211,785	200,880	164,940
1926				
Jan.	321,220	137,790	131,180*	106,260
Feb.	347,900	202,400	183,260*	153,180
March ..	434,850	281,260	280,920*	240,330
April	431,110	287,890	287,030*	228,010
May	433,850	299,630	284,790*	240,590
June	434,740	294,750	311,260*	256,240
July	453,300	306,590	310,740*	256,300
Aug.	455,960	318,390	317,860	257,950
Sept.	423,500	312,880	312,480	256,950

*Corrected figures.

Current Statistics of Industry

Steel Furniture Bookings Again Increase

Washington, Nov. 9.—Steel furniture orders received in September were valued at $2,419,554 for the business group and $707,893 for shelving, according to returns to the department of commerce by 33 manufacturers in the first and 16 in the second group. Shipments also increased for both classifications. Unfilled orders in the business group again dropped being the lowest since June but orders on books in shelving are the heaviest since the department started compiling these figures in September 1924. Further comparisons follow:

BUSINESS GROUP

1925	Orders received	Shipments	Unfilled Orders
September	1,969,769	1,816,484	1,535,231
Total (9 mos.)	$19,672,612	$19,360,816	
October	2,170,076	2,130,498	1,406,117
November	1,975,117	1,885,505	1,496,242
December	2,454,277	2,418,577	1,531,505
1926			
January	3,063,833	2,859,393	1,927,777
February	2,662,095	2,598,713	1,975,884
March	2,687,268	2,843,869	1,804,059
April	2,936,884	2,782,167	1,783,734
May	2,464,457	2,575,561	1,588,788
June	2,556,631	2,605,502	1,535,166
July	2,283,666	2,149,456	1,668,989
August	2,298,526	2,342,615	1,637,538
September	2,419,554	2,449,906	1,613,823
Total (9 mos.)	$23,372,914	$23,207,272	

SHELVING

1925			
September	624,676	542,173	511,689
Total (9 mos.)	$4,911,544	$4,692,083	
October	730,911	622,471	626,933
November	686,814	574,905	739,831
December	620,947	788,461	570,941
1926			
January	582,016	578,161	584,824
February	656,367	603,501	633,935
March	583,701	726,413	604,991
April	704,432	699,370	570,693
May	580,995	617,260	587,310
June	606,698	601,913	553,660
July	604,271	531,361	602,134
August	610,617	545,901	662,148
September	707,893	588,096	790,426
Total (9 mos.)	$5,636,990	$5,491,976	

Copper Output Larger

Calumet, Mich., Nov. 9.—A total of 14,600,000 pounds of refined copper was produced in the Michigan district during September. This was an increase of about 500,000 pounds over the preceding month. Of this total, Calumet & Hecla turned out 9,000,000 pounds; Mohawk, 1,450,000 pounds; Copper Range, 1,750,000 pounds; Quincy, 1,000,000 pounds; Seneca, 600,000 pounds, and Isle Royale, 800,000 pounds.

September shipments of domestic pumps and water systems, based on reports by 22 manufacturers to the department of commerce, were 7571 units, compared with 7578 units in August.

Stoker Orders Increase

Washington, Nov. 9.—Orders booked for mechanical stokers in September totaled 127, compared with 104 in August, 125 in July and 119 in September, 1925, according to returns of 12 establishments to the department of commerce. Of the 127 sold, 31 were fire tube and 96 water tube installations. Further comparisons follow:

	Stokers sold	Fire tube boilers	Water tube boilers
1923 Total	1,464	177	1,287
1924 Total	1,128	161	967
1925 Total	1,348	263	1,085
August	91	27	64
September	119	34	85
October	114	22	92
November	76	8	68
December	108	21	87
January, 1926	72	10	62
February	83	12	71
March	132	31	101
April	145	22	123
May	129	54	75
June	175	24	151
July	125	20	105
August	104	25	79
September	127	31	96

Ship More Locomotives

Washington, Nov. 9.—Shipments of mining and industrial locomotives for the quarter ended Sept. 30, were 220 compared with 185 for the second quarter and 200 for the third quarter of 1925, according to reports of ten manufacturers to the department of commerce. Of the total for the quarter just ended, 126 were trolley-type and 78 storage battery-type mining locomotive while 2 were trolley-type and 14 storage battery-type industrial locomotives.

Hardware Exports Drop

Exports of hardware and allied products in the first nine months of 1926 were valued at $47,706,651 compared with $49,264,233 for that period of 1925, a drop of 2.34 per cent, according to data compiled by the department of commerce. Cutlery exports also decreased $1,486,654 in the same period, due largely to a drop in safety razor blades. Small tool exports in the first three-quarters of 1926 were valued at $14,723,500, a decline of $535,779.

Malleable Output Steady in September

Washington, Nov. 9.—Production of malleable castings continues steady, having varied less than 5 per cent in operating capacity since March. September output was 58,376 tons compared with 57,541 tons in August and 58,474 tons in September 1925. Shipments fell from 57,246 tons in August to 54,635 tons in September. Further comparisons of production and orders follow:

1925	Total tons produced	Per cent of capacity	Total tons booked	Monthly capacity
September	58,474	51.4	49,780	113,697
Total (9 mos.)	542,844	53.1	478,270	1,021,966
October	68,122	61.0	65,420	111,744
November	60,800	55.1	55,552	110,273
December	65,766	59.0	53,991	111,332
1926				
January	75,658	68.2	65,738	110,824
February	66,401	59.2	58,379	110,895
March	74,520	67.4	70,193	110,539
April	66,733	60.4	52,649	110,415
May	60,128	55.2	49,179	**108,891
June	61,023	55.3	45,548	**110,228
July	55,555	51.1	55,766	**108,655
August	57,541	52.7	48,922	**109,161
September	58,376	53.7	47,130	108,627
Total (9 mos.)	575,935	58.3	482,115	988,235

**Capacity since May has been based on following formula: "Total number of units of molding floor space, times average production per molder per day per unit of floor space, times number of actual working days per month."

Sheet Ware Shipments Up

Washington, Nov. 9.—Shipments of galvanized sheet metal ware in September, as reported by 12 manufacturers to the department of commerce were 183,551 dozen, compared with 177,234 dozen in August. Data for September, however, do not include production and stocks on hand. Monthly comparisons follow:

PAILS AND TUBS

In Dozens

1926	Production	Stocks on hand end month	Orders shipped
January	148,537	115,087	150,430
February	138,159	125,002	124,955
March	120,396	125,837	116,036
April	91,707	109,858	109,228
May	95,929	108,672	103,456
June	87,205	104,435	96,437
July	108,631	92,340	119,663
August	127,366	86,963	134,323
September	.....	.....	140,491

OTHER

In Dozens

1926			
January	38,526	61,335	43,441
February	51,658	62,507	48,620
March	60,177	66,989	56,119
April	44,434	60,731	48,182
May	57,568	61,047	49,926
June	54,937	64,308	48,940
July	38,779	57,820	41,652
August	44,900	56,208	44,911
September	.....	.....	43,060

Provides Gage for Iron Imports

Bethlehem Official Contrasts Receipts with Foundry Melt in Eastern District, Putting New and More Serious Light on Situation—Points Out Losses in Revenue Suffered by Railroads and Treasury Department

NEW YORK, Nov. 9.—Imports of German pig iron should be contrasted with the consumption of foundry iron in the eastern district and not with the production of all classes of pig iron in the entire United States, declares R. E. McMath, secretary, Bethlehem Steel Co., in a statement to Edward J. Dougherty, in charge of the antidumping unit of the treasury department here. When this is done, states Mr. McMath, it is found that imports approximate 42 per cent of the iron melted and become a decidedly serious factor.

The further point is made by Mr. McMath that the freight cost of assembling the materials for a ton of pig iron in the eastern district is $10 and the average freight for delivery $2.50. These figures point to the possibility that the eastern railroads may be suffering greater losses from imports than furnace interests themselves. In addition, the tax lost to the federal government is considerable. The antidumping unit recently submitted a questionnaire asking eastern pig iron producers to furnish information concerning foreign competition. Following is Mr. McMath's reply:

With further reference to your letter of Oct. 1, 1926, relative to the importations of pig iron from Germany in which you inquire, pursuant to the provisions of the antidumping act, as to the effect upon the American industry of the importation of this merchandise, we desire to point out that in the consideration of statistics relative to the importation of foreign pig iron into the United States and its effect on the American pig iron industry, we believe there is a general misapprehension as to the proper manner of examining the subject and that the conclusions, even among members of the trade itself are generally wrong because of,—*First*, the failure to isolate the American production of pig iron which comes into direct competition with the foreign product and—*Second*, the failure to isolate the particular American producers who, because of their location, are bearing the brunt of this foreign competition. It seems to us that a proper approach to the problem is indicated by the following questions and answers:

FIRST: What does the foreign pig iron compete against?

The foreign iron competes almost entirely against so-called foundry iron. Generally, statistics on the production of pig iron in the United States include not only foundry iron but basic iron, hot metal (that is a product made by a steel plant as a raw material in the production of steel products but not converted into "pigs") Mayari iron, charcoal, low phosphorus and other special grades of iron, and even ferromanganese and other alloys. The real competition, as stated above, is with the American foundry iron only. American foundry iron constitutes only a small part of what is commonly reported as the total production of pig iron in the United States.

SECOND: What part of the American industry producing foundry iron is directly affected by the foreign importations?

This is a highly important question to consider and it is very easy to answer. The United States tariff commission reports that 89.2 per cent of the importations of foreign pig iron are imported on the Atlantic coast. Each month the department of commerce reports the actual figures showing the ports of importation of all foreign pig iron and from these reports it can be asserted that approximately 90 per cent of the foreign pig iron enters and is consumed within the so-called eastern district of the United States which is comprised geographically by eastern New York, eastern Pennsylvania, New Jersey, Maryland and all the New England states. Thus the producers in this eastern district are the ones who are directly affected. (Undoubtedly all producers in the United States are, in various degrees, either directly or indirectly affected.)

THIRD: To what extent are these particular producers affected?

The proper method for ascertaining the effect of the importation of foreign pig iron into the United States is to compare the total amount of the importations of such pig iron into the eastern district against the total consumption of foundry iron within that district. What does this show? The production for sale by Amercian producers of foundry iron within this eastern district is estimated to be 700,000 tons for 1926. The total importations of foreign iron (based upon 90 per cent of the total imports into the United States for the first eight months of 1926) will show importations into this eastern district for the year 1926 at the rate of 505,000. Thus the total foundry iron, both domestic and foreign, consumed in this district during 1926 will be approximately 1,200,000 tons and this figure is made up of 41.6 per cent foreign and 58.4 per cent domestic! Perhaps an even more striking way of illustrating the effect on the eastern producers of foundry iron is shown by the fact that the total production of the ten producers of foundry iron in the eastern district (which includes all the producers now operating) only slightly exceeds the total amount of the importations of foreign iron into the district during this year! These are the companies that bear the brunt of this foreign competition. These are the companies who feel that it is unfair to permit the German seller to dump his pig iron into our market at prices which barely compensate him for his cost of production and on which he realizes around 25 per cent less than on sales in the German domestic market. This is the American Industry which is directly injured because of this dumping and for whose protection the antidumping act was passed the responsibility for the proper enforcement of which rests with the treasury department.

FOURTH: Are any other Industries affected?

The injury to the country does not stop with the injury to the eastern district producers of pig iron. The cost of producing pig iron probably more than any other commodity is made up to a very large extent by the cost of hauling the raw materials and delivering the finished pig iron to the consumer. The cost of hauling the raw materials is ordinarily spoken of as the "assembly cost." An article which appeared in the *Wall Street Journal* of Oct. 12, 1926, gives the assembly cost of pig iron (that is, the freight costs on ore, coal or coke and limestone, the raw materials necessary for the production of pig iron) in a typical and average center in the United States, at approximately $10.50 per ton. A study of the freight rates on the finished pig iron from the point of production to the consumer, indicates an average freight cost of eastern district producers delivering within the district of approximately $2 per ton. In other words, for every ton of pig iron produced in this eastern district approximately $12.50 of the sales price is paid over to the railroad for freight charges. Thus in the year 1926 and on the basis of 500,000 tons of foreign pig iron imported into this district the railroads will lose $6,250,000 in freight revenue. This figure is only slightly reduced by revenues derived from the hauling of the foreign pig iron for no revenue whatever is derived from the hauling of the materials to produce the foreign pig iron and this, as shown above, is the largest part of the freight revenue, nor is any revenue derived from the longest part of the haul of the finished products,—that is—from the foreign plant to Atlantic ports. The fact is that of the half million tons of pig iron which are imported into this eastern district, an almost negligible quantity is shipped to any extent

inland from the actual ports of importation, i. e. Boston, Providence, New York, Philadelphia and Baltimore. It is probably true that the American railroads are actually losing more money from the importations of foreign iron than the producers of the iron themselves. Thus, you have two industries substantially injured by these importations.

Not only are the American pig iron industry and the American railroads injured by these importations, but even the revenues of the United States Government are considerably reduced because of these importations. Thus, on the basis of 500,000 tons of imported pig iron, the United States treasury obtains a revenue of $375,000 (less the cost incidental to collecting the same) through the Customs. If all importations of pig iron were prevented, it takes but an amateur mathematician to see that the government revenues would be increased many times over the amount now realized from the collection of this duty. The pig iron industry would contribute directly to the federal government 13 per cent of its earnings in the form of income tax; the railroads (whose increased revenues we have indicated above) would contribute a like amount and so on up and down the line of production. It is needless to say that the imported product pays no taxes whatsoever to the United States Government directly or indirectly.

American Labor is also injured by these importations. It is obvious that if the 500,000 tons of pig iron that are imported into this district were produced here, a large number of employes would be given work. The employes producing the pig iron alone form merely a part of the small army required to produce the raw materials. This may be illustrated by pointing out that to produce a half million tons of pig iron, 814,000 tons of coal, 800,000 tons of ore, 690,000 tons of coke and 194,000 tons of limestone are required, and railroad employes are required to haul 2,998,000 tons of these materials and the finished product. Coal miners, ore miners, limestone producers, blast furnace operators and railroad men, beside the individuals directly affected by the employment of this labor, are all injured by these importations of foreign pig iron.

We hope that the above analysis will aid you in determining the answer to the question as to whether the American industry is injured by the importation of German pig iron, which constitutes the largest tonnage of imported iron from any one country.

Ford's Steel Needs Up

A change to all-steel bodies by the Ford Motor Co., Detroit, will require 38,000 tons more steel annually, according to *Daily Metal Trade.* Larger brake drums call for 13,000 tons more of cast iron and 10,000 tons of steel, and a change in gas tanks and in running boards 2000 tons and 5000 tons more of sheets, respectively.

Sound Business

Assured By Better Information and Statistics Say Economists

Business is not approaching a downward sweep of depression although some small slackening of industrial activities may be expected over the next few months. This was the consensus of views respecting the outlook as expressed by business statisticians and economists attending the management week meeting at Ohio State university, Columbus, Oct. 28 and 29. The program of sessions was planned by the colleges of commerce and journalism, and of engineering and the department of psychology.

Papers pertaining to problems of business forecasting, waste elimination and employment were read. Much interest was shown in the papers and discussions relating to business statistics, the sessions of which were presided over by Director Spurgeon Bell of the university bureau of business research. In a paper analyzing current methods of forecasting the trend of business C. O. Hardy of the Institute of Economics, Washington, declared violent swings of business were being eliminated. Since 1921 fluctuations of the curve of industrial activities have been relatively mild. According to Dr. Hardy one of the big factors in bringing about this result has been the wider dissemination and use of business information and statistics.

Hand-to-mouth buying is one of the outgrowths of management under conditions of better information. Results of this are being witnessed now in the absence of unhealthy symptoms which would bring on a deep business depression. Dr. Hardy paid tribute to Secretary of Commerce Hoover for his encouragement of the collection of trade statistics.

That large manufacturing corporations are coming more and more to the use of statistics in the mapping of executive policies was shown in a paper by B. B. Smith, statistican of the White Motor Co., Cleveland. Smith explained the statistical methods by which he forecasts the fluctuations of the Blast Furnace Index one year ahead. The Blast Furnace Index has been found to move up and down with the sales of the company and by forecasting its changes a prediction of company sales is had for a year in advance. Ralph Watkins, of the University Bureau of Business Research, told how retail trade is forecast by studying employment in building and iron and steel industries.

Carl Snyder, general statistician of the Federal Reserve bank of New York, speaking at a dinner meeting of the management week sessions declared fluctuations of the business curve have been flattening out in recent years. He maintained that although some outstanding industries had wide swings up and down, the general volume of all trade activities moves within a narrow margin of from 10 to 15 per cent above normal when times are good and from 10 to 15 per cent below normal when times are dull. One of the significant phases of the present situation is that wages are rising. He showed that industrial prices had had only minor changes in the past few years while agricultural prices have been declining. He predicted stability and higher values for farm products in the next five years.

The subject of waste elimination proved Utilization of Industrial Matewas discussed in a paper on "Imrials," by John A. Willard of Bigelow, Kent, Willard & Co., consulting engineer, Boston, Mass. "How Waste Is Eliminated in the Chemical Industries By the New Development in the Rubber Coating of Iron and Steel" was outlined by Dr. H. E. Fritz, chief of the development division, mechanical rubber goods, B. F. Goodrich Co., Akron, O. "The Use of Lime in Eliminating Waste in Other Industries" was discussed by J. L. Burt, engineer National Lime association.

Locomotive Orders Gain

Washington, Nov. 9.—Shipments of railroad locomotives in October, as reported by leading manufacturers to the department of commerce, totaled 151, compared with 134 in September and 93 in October, 1925. Unfilled orders dropped from 498 in September to 390 in October. Further comparisons follow:

Year and Month	Shipments			Unfilled order		
		Domestic			Domestic	
	Total	Steam	Electric	Total	Steam	Electric
1920	2,683	1,318	306	.....	.....	.....
1921	1,558	830	221	.....	.....	.....
1922	1,405	1,056	128	.....	.....	.....
1923	3,378	2,982	207	.....	.....	.....
1924	1,554	1,312	99	.....	.....	.....
1925						
Oct.	93	47	21	530	386	40
Total (10 mo.)	1,006	635	118	.....	.....	.....
Nov.	106	52	8	585	435	46
Dec.	104	68	18	708	557	54
Total	1,216	755	144	.....	.....	.....
1926						
Jan.	121	96	11	653	506	53
Feb.	163	101	22	572	442	60
March	162	146	11	780	635	50
April	151	122	12	713	580	44
May	140	105	14	726	585	46
June	159	133	11	667	522	53
July	132	82	20	555	445	36
Aug.	124	78	16	525	455	26
Sept.	134	109	13	498	386	24
Oct	151	124	15	390	286	20
Total (10 mo.)	1,437	1,096	145	.....	.....	.....

Industrial Men in the Day's News

Ferdinand W. Roebling Jr. Now Is President of John A. Roebling's Sons Co.

TWENTY-FIVE years' service in the wire industry places him at the head of his company. He believes in and practices broad executive leadership. His other industrial interests are many.

ACTIVITY in municipal and philanthropic work has won for him high esteem in his home city where he was awarded a cup for accomplishing the most for the community in the past year.

READING and travel are his diversions while golf is his principal recreation. His two sons may be termed his hobbies. He is an enthusiastic lover of outdoors.

THE fourth of an unbroken line of Roeblings recently was elected president of the John A. Roebling's Sons Co., Trenton, N. J. He is Ferdinand W. Roebling Jr., grandson of John A. Roebling, founder of the business. Mr. Roebling comes to his new post with a training and a background of experience that have become a tradition with the male members of his family. He was graduated from Lehigh university with the degree of mechanical engineer and during his summer vacations he worked in the Roebling plant at Trenton. After graduation he settled down to work in the mills and in 1911 was made assistant secretary and assistant treasurer. In 1917 he became secretary and treasurer and later was made vice president and continued as treasurer. He brings to the presidency a thorough knowledge of the wire rope and cable business.

It is Mr. Roebling's belief that an executive should not concern himself with minor details, but that he should extend to his subordinates a thorough co-operation which will insure the effective and efficient operation of all branches of his business. He is a firm believer in improving production methods and in maintaining high standards of quality and service wherever possible. He believes in shaping company policies to meet changing conditions.

In succeeding to the presidency of the enterprise which has been built up at Trenton, Mr. Roebling takes up the reins which have been held in his family since 1842. The founder of this family, John A. Roebling, emigrated to the United States from Germany in 1831 and established himself as a farmer near Saxonburg, Pa. About that time, canal construction was being pushed extensively in this country and John A. Roebling, remembering how he had seen hemp rope manufactured in Germany, started a little shop at Saxonburg in 1842 for producing wire rope for use in towing canal boats. The rope which he then made was of parallel wire strands, not twisted as at present. In 1848 he moved to Trenton and set up a wire rope shop there.

It was in 1869 that John A. Roebling started the enterprise for which he gained great fame. In that year he was appointed as engineer for the construction of the Brooklyn bridge. He designed the bridge and started its construction in 1870. Later he developed lock-jaw and died, whereupon his son, Col. Washington A. Roebling, completed the construction of the bridge in accordance with his father's plans. It is of interest to note that the great cables in the Brooklyn bridge were not made by the Roeblings. Their shop at that time did not have the capacity for turning out work of such magnitude. The cables were bought from other manufacturers.

Following the death of his father, Col. Washington A. Roebling, in addition to taking over the work of building the Brooklyn bridge, also succeeded him as head of the works at Trenton. He later retired and was followed as president of the company by Charles G. Roebling. On the death of the latter, Karl G. Roebling, who was a director of the American Iron and Steel institute, succeeded to the presidency. On the death of Karl G. Roebling, Col. Washington A. Roebling, then over 80 years of age, came out of his retirement and again became head of the company, being succeeded at his death by Ferdinand W. Roebling Jr.

In addition to being president and director of the

John A. Roebling's Sons Co., Mr. Roebling has other business interests. He is treasurer and director of the New Jersey Wire Cloth Co., vice president and director of the Durable Wire Rope Co., and vice president and a director of the Standard Fire Insurance Co. He is treasurer and a director of the McFarland Foundry & Machine Co., Trenton. He is a director of the Mechanics National bank, Trenton, and the Chase National bank, New York. He is a director of the Auburn & Syracuse Electric railway, Syracuse, N. Y., and also of the Frick & Lindsay Co., Pittsburgh. During the war Mr. Roebling was a member of the Philadelphia district capital issues committee.

Mr. Roebling was born in Trenton in 1878. He graduated from Lehigh university in 1901. At college he was a member of the Sigma Phi fraternity. His chief interest, aside from his studies, was in dramatic work. He appeared in productions of the college dramatic association and for two years served as president of that association, also serving as stage manager for one year. Mr. Roebling always has led an outdoor life and for years was an enthusiast over golf and tennis. His principal recreation now is golf. He has been an extensive traveler and has visited nearly all parts of the country. He had a shack at Miami, Fla., at a time when there were only two residences in Miami, his own and one near it occupied by Kirk Munro, the writer of boys' stories. Mr. Roebling now has a summer home at Spring Lake, N. J., his regular residence being at Trenton, New Jersey.

For many years Mr. Roebling has taken an active interest in the hospitals of Trenton. One of the newspapers there annually awards a cup to the resident who has accomplished the most for the city during the year. This cup was awarded to Mr. Roebling last year in recognition of his leadership in establishing the city's largest hospital on a sound financial basis. The Orthopedio hospital at Trenton owes its inception to Mr. Roebling's support. He has helped other hospitals at Trenton, and at Spring Lake and Burlington, N. J. He has been an active supporter of the work of Mrs. Roebling in fostering proper methods of bringing up children among the poorer classes of Trenton.

Mr. Roebling spends considerable time in reading, particularly books on history, international politics, travel and philosophy. He takes great interest in his sons. One of them, aged 19, is now attending a school which holds its sessions, in the different seasons, at Rainbow Lake, in the Adirondacks, and at Cocoanut Grove, Fla. The other, aged 15, is attending Pomfret school, in Connecticut. Mr. Roebling is a director of the Spring Lake Golf and Country club and the Casino Co. at Spring Lake, N. J. He is a member of the Trenton club, the Trenton Country club, the Cartaret club, all of Trenton, the Rumson club, Rumson, N. J.; the Bathing and Tennis club, Spring Lake, and the Manasquan River Golf and Country club at Brielle, N. J.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

T H. McGRAW JR. was elected president of the Braeburn Alloy Steel Corp., Braeburn, Pa., at the annual board of directors meeting, Nov. 1. Mr. McGraw for the past six months had been chairman of the board. He had served as secretary and a director of the Standard Seamless Tube Co., Ambridge, Pa., for 12 years, and for two years as general manager of the Carbon Steel Co., Pittsburgh.

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A. F. MacFarland, recently appointed sales agent in Michigan by the Cyclops Steel Co., Titusville, Pa., formerly was a district sales manager for the Vanadium Alloys Steel Co., Latrobe, Pa.

* * *

A. B. Root Jr., elected a director, and the retiring president at the recent American Foundrymen's association convention has had long service in the manufacture of castings. Mr. Root has risen to a position of prominence in the castings industry through his affiliation with the Hunt-Spiller Mfg. Co., Boston, manufacturer of gray iron castings. Mr. Root was born in Boston in 1886. He was graduated from Tufts college, Massachusetts, in 1909 and shortly afterward became engineer of maintenance of ways for the Boston & Albany railroad. For four years he was resident engineer for the Stone & Webster Engineering Corp., Boston, in charge of hydroelectric and steam power plant construction throughout the western and southern states. In 1913 he joined the Hunt-Spiller Mfg. Co., as mechanical engineer and at present retains the same title. He was president of the New England Foundrymen's association in 1919-20. In the 1924-25 period he served as vice president of the American association. As president during the past year he successfully organized the second International Foundrymen's congress, one of the most important events of the foundry industry.

A. B. ROOT JR.

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John R. Stroh has been appointed western sales agent with offices at 302 First National Bank building, Youngstown, for the Pittsburgh Metallurgical Co., Niagara Falls, N. Y., producers of ferrosilicon.

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A. H. Vollmer and Charles S. Carey have become affiliated with Hickman, Williams Co., at their Chicago

offices. Mr. Vollmer had been with Domhoff & Joyce Co. pig iron and coke merchant, and Mr. Carey was manager of sales of the Marquette Ore Co. They joined the sales organization of Hickman, Williams & Co. Nov. 1.

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Morris S. Tremaine, president of the J. G. Wilson Corp., Buffalo manufacturer of rolling steel doors, was elected comptroller of the state of New York in the recent election.

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James A. Campbell, president, Youngstown Sheet & Tube Co., Youngstown, H. L. Rownd, vice president, Republic Iron & Steel Co., that city, A. E. Adams, Benjamin

C. M. DENISE
McClintic-Marshall Co., Pittsburgh, Elected Second Vice President, American Institute of Steel Construction

Ebans, George H. Gessner, Rev. M. F. Griffin and C. J. Strouss recently were elected directors of the Youngstown chamber of commerce.

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James R. Mills, district manager in Cleveland for the Carnegie Steel Co., Pittsburgh, has been chosen a member of the board of education in Cleveland, to fill a vacancy.

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E. J. Poole, general superintendent, has been advanced to vice president in charge of operations of the Vanadium Alloys Steel Corp., Latrobe, Pa. He succeeds W. S. Jones, who resigned to join the Carpenter Steel Co.

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George W. Denyven, Boston, was appointed New England representative for the Tyler Tube & Pipe Co., Washington, Pa., effective Nov. 1.

W. H. S. Batemen & Co., Philadelphia, has been appointed its special agent, effective at the same date.

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John Parker has been appointed New England representative for the Rollway Bearing Co., Syracuse, N. Y., manufacturer of radial and thrust rolled bearings. Mr. Parker had been with the Browne & Sharpe Mfg. Co. for 11 years.

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S. W. Wakeman has been appointed vice president and general manager of the Bethlehem Shipbuilding Corp. Ltd. He had been general manager of the Fore River yards, Quincy, Mass. for nine years and now will have charge of sales and operations along the Atlantic Coast.

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W. S. Ballenger has resigned as treasurer of the Chevrolet Motor Car Co., Flint, Mich. Mr. Ballenger joined the Flint Wagon works in 1888 and was one of the original officers of the Buick Motor Car Co. He joined the Chevrolet company in 1911 when it was organized.

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Ralph M. Shaw has been appointed a director of the United States Cast Iron Pipe & Foundry Co., Burlington, N. J. He is a member of Winston, Strawn & Shaw, Chicago, and has been associated with the Foundry company as general counsel since its organization.

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Edward J. Medart has resigned as president and treasurer of the Fred Medart Mfg. Co., St. Louis, manufacturer of pulleys and power transmission machinery.

Philip S. Medart, for 18 years vice president of the company, was named to succeed his brother. William T. Mellow was elected vice president to succeed Philip Medart. Mr. Mellow is vice president of the Liberty Foundry Co.

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Edwin Corning, president of the Ludlum Steel Co., Watervliet, N. Y., was elected lieutenant governor of New York in the election of Nov. 2. Mr. Corning for years has been active in the democratic councils of New York State and on Jan. 15, 1926, was elected chairman of the democratic state committee. His political activities previously had been of a directional character and this is the first public office which he has held. He will be inaugurated as lieutenant governor on Jan. 1.

* * *

John T. Pratt has been elected president of the Chrome Alloy Tube Corp. This company has moved its headquarters from Newark, N. J., to 26 Broadway, New York. The manufacturing operations continue to be conducted at Newark.

Ennis W. Backman was elected vice president and will continue his duties in charge of production at Newark.

Arthur V. Farr, who recently resigned as sales manager of the Roland Steel Co. to take charge of the sales of the Chrome Alloy Tube Corp., also was elected vice president. Louis C. Owens Jr. was elected secretary-treasurer.

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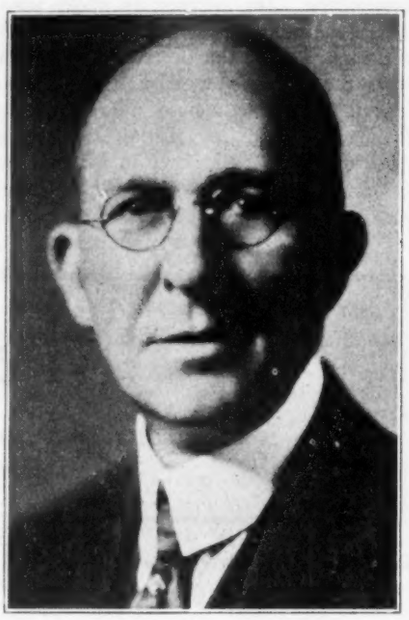
Elmo V. Smith, contracting manager, was transferred from the Denver-Salt Lake City district to Chicago



C. EDWIN MICHAEL
Virginia Bridge & Iron Co., Roanoke, Va., Elected Vice President, American Institute of Steel Construction

and given charge of structural and highway bridge sales in the metropolitan district in the personnel changes to be made in the western division contracting department of the American Bridge Co., effective as of Nov. 1.

C. P. Griffith was appointed contracting manager to succeed Mr. Smith in the Denver-Salt Lake City territory.

Newton O. Holt was appointed contracting manager at Chicago and charged with structural and highway bridge sales outside of the metropolitan district, within southern Wisconsin, northern Illinois and northern Indiana.

George Bryan Jr. was appointed contracting manager at Duluth, Minn., succeeding Walter G. Zimmerman who recently was promoted to assistant division contracting manager at the division headquarters in Chicago.

Obituaries

JAY N. CLARKE, for the past few years sales agent at Cleveland for the Carpenter Steel Co., Reading, Pa., died of angina pectoris, Oct. 30, at his home in Cleveland, aged 71 years. He was born in Sandusky, O. in August, 1855 and after his education there became identified with railroad shop work. He entered the steel industry more than 20 years ago as sales agent at Cleveland for the Bethlehem Steel Co. He was with that organization for a number of years, leaving to join the Carpenter company. He was the father of Norris J. Clarke, president of the Lake Erie Bolt & Nut Co., Cleveland.

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Lou G. Scamihorn, 31 years old, for several years connected with the Warner Gear Co. at Muncie, Ind. died recently.

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T. E. Cunningham, superintendent of the gray iron foundry of Crompton & Knowles Loom Works, Worcester, Mass., died recently at his home in Worcester.

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John G. Haubrichs, for 12 years secretary and treasurer of the General Model & Pattern Co., Cleveland, died Nov. 2 at his home there at the age of 56.

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John Skelton Williams, controller of the currency in Woodrow Wilson's administration, and widely known as a banker and railroad builder, died suddenly at Richmond, Va., Nov. 4. Mr. Williams was 61 years of age.

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Charles E. Ramsey, aged 54, former president and founder of the Ramsey Coal Co., died Oct. 28 in his home at Ligonier, Pa. He was identified with many business interests in the Ligonier valley.

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Charles A. Rapallo, secretary of the Robeson Process Co., 200 Fifth avenue, New York, maker of corebinder materials, died recently, aged 63. He had been associated with the company for 20 years, holding his secretarial position throughout virtually the entire period. From 1918 to 1923, he was also in charge of foundry sales. Mr. Rapallo was born in New York and was graduated from Columbia university. Prior to his affiliation with the Robeson company, he was in the traffic department of the Delaware, Lackawanna & Western railroad.

* * *

Alfred Merritt, who died Nov. 1 in a Duluth hospital at the age of 79, was a pioneer in iron ore development. He was born in Austinburg, O., moving to the head of Lake Superior at the age of 9. Mr. Merritt, with his brothers, is credited with the discovery of the Mesabi range. Alfred Merritt set the stake for the discovery test pit at what now is known as Mountain Iron mine on the Mesabi range. This was the first deposit of commercial size to be discovered on the range. The stake was set Nov. 16, 1890. Mr. Merritt was the first president of the Duluth, Mesabi & Northern railway.

* * *

Charles Bradley Rowland, vice president of the Continental Iron Works, Brooklyn, N. Y., died Nov. 1, at his home in Greenwich, Conn., aged 71. Mr. Rowland was born in Brooklyn and graduated in 1884 from the Columbia school of mines. He then entered the Continental Iron Works, of which his father was founder and president and where the famous Monitor of the Civil war was constructed in 1862. He devoted his entire career to the iron business, and for the last 12 years had been vice president. He was a member, among various organizations, of the American Society of Mechanical Engineers, American Society of Civil Engineers and the Society of Naval Architects and Marine Engineers. He was a member of the board of directors of the Batapelus Mining Corp., Batapelus, Mexico.

* * *

Hamilton Stewart, vice president of the Harbison-Walker Refractories Co., Pittsburgh, and chairman of the drive for the Cathedral of Learning of the University of Pittsburgh last year, died early Nov. 2 in the Homeopathic hospital, as announced briefly last week. Mr. Stewart was born in Allegheny, Dec. 13, 1868. He left school to go to work and for several years worked at various jobs. He joined the Harbison-Walker company, of which he later became vice president, as a clerk in 1889, then 21 years of age. Although interested in many enterprises, he spent most of his time with the Refractories company.

Mr. Stewart was a member of the board of trustees of both the University of Pittsburgh and Grove City college. His work in raising funds for the construction of the Cathedral of Learning was prominent. Some of the corporations of which Mr. Stewart was a director, were: Union National bank, Long Island Lighting Co. of New Jersey, the Tel-Autograph Co., the Koppers Co., and the Certainteed Co. of New York. He was on the executive board of directors of the Crucible Steel Co. of America.

Coke Output Drops as Soft Coal Gains

As was the case in the preceding week, output of beehive coke in the week ended Oct. 30 receded slightly while that of bituminous coal forged ahead. Production of coke in the week ended Oct. 30 was 197,000 tons, compared with 200,000 in the week ended Oct. 23 and 201,000 in the week ended Oct. 16. Bituminous coal, meanwhile, advanced from 12,386,000 tons in the week ended Oct. 16 to 12,712,000 in the week ended Oct. 23 and 13,430,000 in the week ended Oct. 30. The October total of bituminous coal was 54,536,000 tons, a daily average rate of 2,098,000 tons contrasted with 1,959,000 for September. For 1926 to date bituminous coal production has totaled 460,842,000 tons. For 1925 the comparative figure is 417,252,000 and for 1924, 390,531,000.

ESTIMATED PRODUCTION OF BEEHIVE COKE

(Net tons)

	—Week ended— Oct. 30, 1926 b	Oct. 23, 1926 c	1926 to date	1925 to date a
Pennsylvania and Ohio....	162,000	163,000	8,021,000	6,234,000
West Virginia	16,000	16,000	642,000	511,000
Ala., Ky., Tenn., and Georgia	5,000	6,000	526,000	749,000
Virginia	6,000	6,000	297,000	296,000
Colo., and N. Mexico	4,000	5,000	217,000	199,000
Wash., and Utah	4,000	4,000	145,000	162,000
U. S. Total....	197,000	200,000	9,848,000	8,151,000
Daily average	33,000	33,000	39,000	32,000

(a) Adjusted to make comparable the number of days in the two years. (b) Revised since last report. (c) Subject to revision.

One steel producer figures that the increases in wages at the coal mines have amounted to 52 cents per ton in coal and 73 cents per ton in coke, with a resulting increase of between $1.10 to $1.25 per ton in the cost of finished steel.

A copyright dispatch to the *New York Times* states that Europe is entering winter with a shortage of 100,000,000 tons of coal.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

STA-WARM ELECTRIC HEATER CORP., formerly at Minneapolis, Minn., has moved its plant and offices to Ravenna, O., where it has bought a plant and equipped it for production of its line of specialties. The move was made to obtain lower freight rates on its raw materials and finished products.

* * *

TROY MATCH PLATE CO., Troy, O., has increased its space by a new building to be devoted to production of brass and aluminum castings.

* * *

AFTER being idle for more than a year, plant No. 2 of the Atlas Foundry Co., Marion, Ind., has resumed operations. Plant No. 1 has been working night and day in an attempt to keep up production.

* * *

SANDUSKY PATTERN CO., Sandusky, O., has been organized and incorporated to take over the business of the National Pattern Co., of that city. F. J. Grathwol will continue as head of the company. The production of patterns will be continued.

* * *

ERIE FOUNDRY CO., Erie, Pa., has entered an order for a 4000-pound four-roll board drop hammer from the Lindell Drop Forge Co., Lansing, Mich. Another recent order was from the Henry Vogt Machine Co., Louisville, Ky., for a 16,000-pound steam drop hammer and a trimming press. The latter machines will be used in the manufacture of 6-inch valves.

* * *

LYCOMING MFG. CO., Williamsport, Pa., has elected James B. Graham, formerly president, chairman of the board. John H. McCormick was elected president and general manager and W. H. Beal, formerly sales manager, was chosen secretary and sales manager. The company manufactures automotive motors and has increased production largely the past two years.

* * *

TEXAS ELECTRIC STEEL CASTINGS CO., Houston Tex., has made extensive machinery additions, including a large Westinghouse electric furnace and a 20-ton electric crane. The company, which was recently organized, specializes in high grade carbon and alloy steel castings. F. A. Kroll, formerly in metallurgical engineering work in Houston, is president, and F. G. Sowden, formerly with the Minneapolis Steel & Machinery Co., is vice president.

* * *

RUNDLE MFG. CO., Milwaukee, manufacturer of plumbers' supplies, sanitary fixtures, etc., has increased its capitalization from $700,000 to $1,500,000. It is stated that a stock dividend of $560,000 has been declared, absorbing the greater part of the new issue. While the concern is building a large addition to its boiler house and making minor improvements in the works at Twenty-seventh and Cleveland avenues, no important expansion is contemplated at present. Henry Held is president and general manager.

* * *

CONSTRUCTION of terminals, including railway tracks, power plant, warehouses, docks, office building and other facilities on the Ship Channel at Clinton, Tex., adjacent to the Southern Pacific railroad deepwater terminals, will be started within the next few days by the Carnegie Steel Co., according to T. T. Hopper of the Thomas T. Hopper Construction Co., which has the contract. It is stated the cost will be about $5,000,000. It is the purpose of the Carnegie Steel Co. to make this the distributing center for Texas, Mexico, Central America and South America, it is stated.

* * *

ALEASE of the National Motor Corp. plant at Indianapolis by the Weyman Body Corp., an English company, as an American branch for building Weyman automobile bodies, is to be signed in Indianapolis shortly by representatives of the company. The body corporation is being represeted by B. W. Twyname, a former official of the Nash Motor Co. Frederick Moskovics, president of the Stutz Motor Car Co., has been interested in establishing the American plant of the Weyman company in Indianapolis and on a trip abroad several weeks ago talked with the English officials regarding the Indianapolis location. The Weyman body is said to be lighter than the bodies used on cars manufactured in the United States. It is being used extensively by English and European automobile manufacturers.

* * *

WITH excavation and sub-structure bids in, Architects Holabird & Roche, 104 South Michigan avenue, Chicago, are asking proposals for a $5,000,000 hotel at Grand avenue and Fifth street, Milwaukee, for the Schroeder Hotel Co., 86 Michigan street, Milwaukee. It will be the largest hotel in the city, 23 stories, 150 x 200 feet, and a 5-story service annex and garage, 60 x 150 feet. Eight electric passenger elvators are included. The structural steel requirement has not been definitely given out but is estimated at about 2500 tons.

* * *

STEARNS CONVEYOR CO., Cleveland, has been bought by the Chain Belt, Co., Milwaukee, increasing to five the number of affiliated companies. The other three are the Sivyer Steel Casting Co., the Federal Malleable Co. and the Interstate Drop Forge Co., all of Milwaukee. The Stearns company will continue to operate as a separate organization, with Earl D. Stearns, Cleveland, remaining as president. The concern was established in 1921 and manufactures belt conveyors and silo coal handling systems, fitting in well with the present line of conveyors made by the Chain Belt Co., which also manufactures chains and concrete mixers.

* * *

FOLLOWING the purchase at public auction of the entire assets of the Topp-Stewart Tractor Co., Clintonville, Wis., by a group of original stockholders, the Topp-Stewart Co. of Clintonville has been incorporated with $75,000 capital to continue the manufacture of tractors and chasses for shovels, hoists, etc. of the crawler type. The property was bid in for less than the encumbrance and the new corporation takes over the assets at the actual sum invested by the men who made the purchase, all being local men and several being heavily interested in two large local industries, the Four Wheel Drive Auto Co. and the Menominee Motor Truck Co. Dr. W. H. Finney, H. A. Rindt and Charles Topp are the incorporators.

Continuous Sheet Mill Patent Is Granted

The basic patent of the American Rolling Mill Co., Middletown, O., covering its new operations of continuous rolling of sheet and thin plate metal at its Ashland, Ky. plant, was granted Oct. 12, 1926. This patent forms an important part in the documentary history of the development of rolling mill practices, and deals with the production of sheets and thin plates by continuous process in such a manner that the changes in shape, and the distortions of the rolls, are utilized as an advantage when applied as instructed, instead of being avoided, as has been the effort in the previous attempts at continuous sheet rolling. This is the first radical development that has been successful, in an industry that is over 200 years old, and is the result of long experience of the inventor, J. B. Tytus, and many years of experiments of the staff of the American Rolling Mill Co.

Intervene in Rate Case

Washington, Nov. 9.—American Institute of Steel Construction, Mansfield Sheet & Tin Plate Co. and Otis Steel Co. have been permitted by the interstate commerce commission to intervene in docket No. 18548, the case of the Jones & Laughlin Steel Corp. against the Alton & Eastern railroad.

Bessemer steel rails first were made in this country at Chicago in 1865.

Will Attend Conference

Three leading members of the bureau of mines staff will take prominent part in the International Conference on Bituminous Coal, to be held at Carnegie Institute of Technology, Pittsburgh, Nov. 15 to 18, according to an announcement of Thomas S. Baker, president of the Institute.

Scott Turner, director-in-chief of the bureau of mines, will serve as chairman of the smokeless fuel section. A. C. Fieldner, superintendent of the Pittsburgh experiment station and chief chemist of the bureau, will speak on "The Practical Value of Fundamental Research on Coal." O. P. Hood, chief mechanical engineer, bureau of mines, will deliver a paper on "Smokeless Fuel."

Industrial Business Changes

HINDERERS IRON WORKS, New Orleans, La., for 65 years established at 1112 Camp street, since its foundation, has built a new plant at 1607 Prytania street and has moved its business there. The iron works has supplied much of the ornamental iron work for balconies in the French quarter.

* * *

Symons Clamp & Mfg. Co., Chicago, has moved its plant and offices to 4249 Diversey avenue.

* * *

General Sheet Metal Works, San Francisco, recently organized, has established a plant at 1529 Pine street.

* * *

Dyer Co., Cleveland, manufacturer of machinery and household appliances, has removed its general offices to the Euclid-Thirtieth building.

* * *

Holland-American Trading Corp., importer of iron and steel, has moved its New York offices from 39 Broadway to 26 Broadway.

* * *

Wallace Equipment Co., Seattle, has changed its name to Wallace Bridge & Structural Steel Co. and has increased its capital from $150,000 to $450,000.

* * *

John C. Brill Co., New Orleans, La., sales representative for steel and iron products, has established a branch office at 7052 Avenue F, Houston, Tex., in charge of Milton C. Hawkins.

* * *

W. Horace Williams Co., Inc., New Orleans, La., has moved its offices to the Southern building. The company specializes in engineering and contracting.

* * *

Pollak Steel Co., with general offices at Cincinnati, O., has opened a sales office at Detroit in charge of B. G. Lalman, sales engineer, and W. R. Klinkicht, metallurgist.

* * *

Butler Mfg. Co., Kansas City, Mo., has appointed Drane Tank Co., Clinton building, Tulsa, Okla., distributor of its steel tanks and accessories in Oklahoma and Kansas.

* * *

Cyclops Steel Co., Titusville, Pa., has opened offices and warehouse at 5132 Grand River avenue, Detroit, in charge of A. F. MacFarland. Stock of special steels will be carried.

* * *

Wisconsin Auto Spring Co., Milwaukee, has changed its name to the Wisconsin Spring & Truck Corp. and has increased its capitalization to $10,000 and 100 shares no par value.

* * *

Yates-American Machinery Co., Beloit, Wis., manufacturer of woodworking machinery, has moved its branch at Macon, Ga., from 461 Fifth street to Oak and Fifth streets to obtain larger space.

* * *

Lufkin Foundry & Machine Co., Lufkin, Tex., has opened a sales office at Tulsa, Okla., in charge of W. W. Trout, and at El Dorado, Ark., in charge of Louis Douglass.

* * *

Charles H. Abbott Inc., 609 Franklin avenue, Hartford, Conn., manufacturer of steel balls for bearings and metallic burnishing materials, has changed its name to the Hartford Steel Ball Co.

* * *

Nevada-Pacific Minerals Co., Rives-Strong building, Los Angeles, has been incorporated to produce and market molding sand and silica sand on the Pacific coast. Harry E. Blood, formerly connected with the Mineral Supply Co., Los Angeles, is the incorporator.

* * *

Patterson Tool & Supply Co., Dayton, O., W. B. Patterson, president, has been appointed agent for the Federal Press Co., Elkhart, Ind.; Seneca Falls Machine Co., Seneca Falls, N. Y.; Stockbridge Machine Co., Stockbridge, Mass.; Foote Burt Co., Cleveland; Rockford Lathe & Drill Co., Rockford, Ill.; Strong, Carlisle & Hammond Co., Cleveland; E. C. Atkins & Co., Indianapolis, Ind.; James Clark Jr. Electric Co., Louisville, Ky.

News of Societies

ONE of the features of the fall meeting of the American Welding society which is to be held Nov. 17-19, at the Broadway auditorium, Buffalo, will be an international welding and cutting exposition. Thus members of the society will have the opportunity to see the new developments in welding apparatus and supplies and to inspect a large variety of welded products. This exposition will open on Tuesday afternoon, Nov. 16, one day before technical sessions commence, and will remain open through Friday, Nov. 19. The exhibits also will be open on Tuesday and Wednesday evenings.

Technical sessions of the convention will be held both morning and afternoon on Wednesday and Thursday and Friday morning. To provide complete discussion at these sessions, papers have been preprinted in the October issue of the *Journal* of the society. An inspection trip to Niagara Falls has been arranged for Friday afternoon and evening. One entertainment feature of the meeting will be a dinner-dance at the Hotel Statler on Thursday evening. The program for the meeting is as follows:

Wednesday, Nov. 17

MORNING

"Welding of Locomotive Parts," by M. Gjersten, master welder, Northern Pacific Co.
"Organization of Welding on the Railroad," by F. H. Williams, assistant test engineer, Canadian National railways.

AFTERNOON

"Structural Steel Joints Fundamentally Designed for Arc Welded Connections," by A. M. Candy, general engineering department, Westinghouse Electric & Mfg. Co.
"Tests on Welded Roof Truss," by H. H. Moss, Linde Air Products Co.

Thursday, Nov. 18

MORNING

"Welding Science in the Engineering Curriculum of Universities," by Prof. W. P. Turner, Purdue university; Prof. B. L. Lucas, Mississippi Agriculture and Mechanical college; Prof. S. T. Hart, Syracuse university; Prof. O. D. Rickly, Ohio State university; and Prof. F. V. Larkin, Lehigh university.

AFTERNOON

Meeting of welding wire specifications committee. C. A. McCune, chairman.
Meeting of American Bureau of Welding. This group is the research department of the American Welding society.

EVENING

Dinner-dance, Hotel Statler.

Friday, Nov. 19

MORNING

"Welding in a Gaseous Atmosphere," including demonstrations to be made by P. P. Alexander and R. A. Weinman, General Electric Co.
Meeting of board of directors.

AFTERNOON

Inspection trip to Niagara Falls.

* * *

Foundrymen Announce Program

National problems of interest to industry as well as those dealing with the administration of foundries will be discussed at the thirtieth annual meeting of the National Founders association, which is to be held at the Hotel Astor, New York, Nov. 17-18. Sessions will be held on Wednesday morning and afternoon and Thursday morning. The annual dinner will be served on Wednesday evening. Plans for Tuesday, the day preceding the opening of the convention, call for a meeting of the administrative council in the morning and an alumni dinner for past officers in the evening. The program is as follows:

Wednesday, Nov. 17

MORNING

Reports of officers.
Report of committee on industrial education, by L. W. Olson.
"Our Permanent Problem," by James A. Emery, counsel, National Founders association.
"Education for Work," by L. A. Hartley, director of industrial education, National Founders association.

AFTERNOON

"The Patent System: What It Means to Industry and How It May Be Improved," by Thomas E. Robertson, commissioner of patents, Washington.
"Practical Business Applications of Economic Studies," by M. C. Rorty, vice president, International Telephone & Telegraph Co., New York.
"Natural Light and Ventilation in the Foundry," by Clarke P. Pond, vice president, David Lupton's Sons Co., Philadelphia.
"Artificial Lighting in Foundries," by W. H. Rademacher, Edison Lamp Works, General Electric Co., Harrison, N. J.

EVENING

Convention dinner. James A. Emery, toastmaster.
"The World and Its Ways in 1926—A Bird's-Eye View of Present Day Conditions in Europe," by K. V. Kaltenborn, associate editor, *Brooklyn Daily Eagle*, Brooklyn, N. Y.

Thursday, Nov. 18

"Why the Practical Foundry Cost Method Pays Dividends," by E. T. Runge, Cleveland.
"Elimination of Waste in Industry," by R. M. Hudson, chief, division of simplified practice, department of commerce, Washington.
Committee reports.
Election of officers.

The most recent addition to the data sheets of the American Society for Steel Treating is 12 pages discussing "What Should a Man with Only One Pyrometer Do in Case of Trouble?" The author, H. M. Candee, Bristol Co., Waterbury, Conn., outlines pyrometer troubles, their causes, their remedy and the best methods for checking.

Convention Calendar

Nov. 15-16—Foundry Equipment Manufacturers association. Fall meeting at Ambassador hotel, Atlantic City, N. J. H. Cole Estep, 1213 West Third street, Cleveland, is secretary.

Nov. 17-19—American Welding society. Fall meeting at Broadway auditorium, Buffalo. M. M. Kelly, 33 West Twenty-ninth street, New York, is secretary.

Nov. 17-18—National Founders' association. Annual meeting at Hotel Astor, New York. J. M. Taylor, 29 South LaSalle street, Chicago, is secretary.

Dec. 6-9—American Society of Mechanical Engineers. Annual meeting at Engineering Societies building, New York. Calvin W. Rice, 29 West Thirty-ninth street, New York, is secretary.

Dec. 6-11—Fifth National Exposition of Power and Mechanical Engineering at Grand Central Palace, New York. Charles F. Roth, Grand Central Palace, New York, is manager.

Dr. Guertler Discusses Metal Hardness

An illustrated lecture on the "Hardness of Metals" was presented before 300 members of the Chicago chapters of the American Society for Steel Treating and the American Institute of Mining and Metallurgical Engineers, Nov. 4, at the City club, Chicago, by Dr. William M. Guertler, the well-known German metallurgist. Dr. Guertler, who is president of the Metallurgical Society of Germany and director, Metall Institut des Technischen Hochschule, Berlin, was one of the authors of the papers presented at the time of the recent convention of the American Society for Steel Treating, at which time also he delivered the first Edward deMille Campbell memorial lecture.

In his lecture Dr. Guertler emphasized again his idea that metallurgists are "barking up the wrong tree" in their studies of metal hardness. He reiterated his views that they should go back to the start and endeavor to know all possible about the alpha and beta iron atoms, as well as what hardness really is, before approaching the subject from a more practical standpoint. Among those who discussed the paper were: David Levinger, director, American Institute of Metals; R. G. Guthrie, metallurgist, People's Gas Light & Coke Co., Chicago, and E. J. Janitzky, chief metallurgist, Illinois Steel Co., South Works, South Chicago, Ill.

During October there was an increase of 27 per cent in the number of men applying for employment to the American Plan association, Cleveland, and a decrease of 30 per cent in the number of jobs available. In October approximately 8000 less men were working in Toledo shops and 55,000 fewer in Detroit shops than a year ago.

Machinery

General Electric's Buying of $100,000 of Equipment for Refrigerator Plant Features Industrial Buying

CONDITIONS in the machinery market during the last few days have become more stable, but as yet no increase in sales has been noted. Inquiries appear more encouraging with buyers seeking immediate delivery. There is some disposition for purchasers to withhold action and finally to take used equipment. Among recent large orders is that of the General Electric Co. which has placed equipment amounting to $100,000 for its refrigerator manufacturing plant at Schenectady. More interest is being shown by the railroads and a number of lists of from 5 to 20 tools are current. Although the automotive industry is curtailing the number of employes, demand for equipment is somewhat stronger, indicating preparations for new models.

New York, Nov. 9.—Inquiry is showing some improvement, but as yet has not led to any particular increase in orders. Railroad lists are more in evidence. Chesapeake & Ohio has sent out inquiries through its Richmond, Va., offices for several machines, including a 30-inch geared engine lathe and a 36-inch vertical turret lathe. Delaware & Hudson also is inquiring for several machines. Notable in industrial activity is recent buying by General Electric Co. for its proposed refrigerator manufacturing department at Schenectady, N. Y. It is estimated that fully $100,000 of equipment, principally automatic machinery, has been closed. Present plans call for the production of 2000 refrigerators per week. Recent railroad orders include a 5-foot radial drill and a 42-inch x 18-foot lathe for Lehigh & Hudson railroad; a 1500-pound steam hammer for Illinois Central; and a 36-inch x 44-inch side head mill for the Canadian National, all going to the Niles-Bement-Pond Co.

Pratt & Whitney Co. has taken orders for five hand milling machines and one spline miller for an automobile company at Lansing, Mich.; a profiler for Victor Talking Machine Co., Camden, N. J.; a 13-inch and a 16-inch geared-head lathe for Waltham Watch Co., Waltham, Mass., and two bench drills for a Bridgeport, Conn., concern; also a 13-inch geared head lathe for a Waterbury, Conn., company and a 16-inch geared head lathe for a New Haven, Conn., company.

Boston, Nov. 9.—Sales of new tools during the week have been few. Leading dealers in used equipment, on the other hand, report a marked increase both in sales and inquiry. A textile machine manufacturer tentatively in the market for six new tools has purchased his full requirements from the used list. Tool manufacturers continue to report sustained operations with orders in many cases until the end of the year. New insuring the present rate of production York, New Haven & Hartford railroad is tentatively in the market for a sizable list. This is the same list as that put out early in the year and against which little has been ordered. Prices are firm in all lines of equipment. Sales of electric motors for industrial purposes have improved during the week.

Cincinnati, Nov. 9.—Although tool builders and sellers booked relatively little business the past week, they were actively engaged in bidding on several lists of size which are likely to be awarded this week. Inquiries are more numerous than for weeks and these have added stability to the market. Several railroad lists are pending involving from 5 to 20 tools. Automobile manufacturers are manifesting more interest in the market. Several manufacturers report bookings so far this month beyond expectations, due partially to the closing of inquiries pending for some time. Activity in used machinery is of small consequence.

Pittsburgh, Nov. 9.—Inclusion last week of purchases by the Pittsburgh board of education of equipment for the Taylor-Allerdice and Arsenal high schools furnishes the feature of the equipment market. Somers, Fitler & Todd Co. was awarded 19 machines, including six lathes, four drill presses, two motor-driven forges, two presses, and three hacksaws. Some machines were thrown out entirely, but two 16-inch shapers were bought from Reliance Machinery Sales Co. Various other orders for machine tools and one or two machines at a time are noted. Action is expected shortly in a more decided way on Westinghouse Electric & Mfg. Co.'s list, as well as lists of Carnegie Steel Co. Norfolk & Western railroad is taking bids and will purchase sometime in December against its 1927 program, the list involving 140 machines. Crane sales have been exceedingly meager, but one or two are slated for closing this week.

Chicago, Nov. 9.—The machine tool market, stagnant for several weeks now is being stirred up somewhat by prospective buyers. Consequently prospects for November are more encouraging to tool dealers. Some closed October with a sales volume below that of the previous month. Today, the number of of inquiries at hand is favorable and seems to indicate that some industrials will be closing out their 1926 requirements this month. Purchases are scattered and generally for a few tools at a time. Detroit automotive makers are doing considerable buying at this time, while closer to Chicago various agricultural implement interests continue placing a number of tools. Locally, demand is only fair, but well diversified. Punch presses are displaying strength. Crane activity continues to leave much room for improvement, especially in overhead equipment.

Cleveland, Nov. 9.—Sales in this district continue only fair. Numerous small inquiries are current but business is closed only after an unusual amount of missionary and paper work. The majority of purchasers are in a hurry for the equipment they buy and ask for prompt delivery. The result is that in some cases the time demand leads to the purchase of used tools. While there is no tendency toward price shading, extension of credit for periods longer than that usually considered good practice has caused some more scrupulous dealers to lose business which otherwise they would have taken. Manufacturers report deliveries pretty well taken up for the balance of this year and are booking orders for the first quarter. The automotive industry both in Detroit and Cleveland are laying off men, but some tools are being purchased preparatory to the introduction of new models.

CRANE ORDERS PLACED

Six overhead electric cranes for lumber handling for Weyershaeuser Lumber Co., Tacoma, Wash., for installation at company's lumber terminal at Port Newark, N. J.; order reported placed with Harnischfeger Corp.

Two 10-ton traveling cranes for Deep Water Ship Terminal, California City, Calif., to Pacific Rolling Mill Co.

Two cranes for an unidentified manufacturer in Pittsburgh district; to Shaw Crane Works.

Among single orders were: 175-ton double trolley crane for Clebure, Tex., shops of Atchison Topeka & Santa Fe, to Harnischfeger Corp.; 10-ton handpower crane for Bayonne, N. J., plant of Tidewater Oil Co., to Alfred Box & Co.; 3-ton handpower crane for Lowe Paper Co., Ridgefield, N. J., to New Jersey Foundry & Machine Co.

Schedules Merchant Mill

Production of merchant steel began last week at the plant of the Corrigan, McKinney Steel Co., Cleveland, upon completion of its new 10-inch mill. The new unit will have a monthly production range of 10,000 to 12,000 tons of rods up to No. 5; squares from ¼ to ⅞-inch; rounds from ¼ to 1 inch; and, ovals, flats, octagons, etc. in corresponding sizes. The mill also is designed for the output of hot rolled strip steel in narrow widths. A second unit, a 12-inch mill, now is under construction and officials of the company plan for its initial scheduling shortly after the turn of the new year.

Construction and Enterprise

Concise and Timely Business Building Opportunities
from the Field of Industry

BIRMINGHAM, ALA.—Joubert & Goslin Machine & Foundry Co., 800 North Thirty-fifth street, will build an addition to house production of drying and evaporating equipment.

BIRMINGHAM, ALA.—Charles C. Steward Machine Co. Charles C. Steward president, 1100 First avenue, has let contract to the Virginia Bridge & Iron Co. for a new plant of five buildings, 75 x 160 feet, 40 x 60 feet steel construction, 30 x 100 feet, 30 x 50 feet and 20 x 40 feet wood construction. They will be equipped with machine tools to manufacture mining machinery.

SHEFFIELD, ALA.—Bliss Mfg. Co. is considering plans for a plant to manufacture commercial refrigerating machinery.

SHEFFIELD, ALA.—Sorg Engine Co., Owosso, Mich., manufacturer of internal combustion engines, considering plans for plant to be established here.

EL DORADO, ARK.—Griffin Auto Co., Clark Sample, manager, will build garage and repair shop costing $100,000.

LOS ANGELES—American Laundry Machinery Co., 351 East Third street, is building a 3-story plant 90 x 90 feet at Fourth and Anderson streets.

LOS ANGELES—Nevada-Pacific Minerals Co., Rives-Strong building, has been incorporated to produce molding and silica sand, by Harry E. Blood.

LOS ANGELES—Advance Auto Body Works will build a plant 70 x 280 feet and 70 x 108 feet at Mission road and Macy street, for which additional equipment will be needed.

SAN FRANCISCO—General Sheet Metal Works has established a plant at 1529 Pine street. James E. Guthrie and Walter M. Twohig recently formed the company.

SAN JOSE, CALIF.—Pacific Gas & Electric Co., J. D. Kuster division manager, 245 Market street, San Francisco, will build a machine shop here.

VERNON, CALIF.—Killifer Mfg. Co., manufacturer of agricultural implements and road-building machinery, A. W. Hudson president, will build additions to its plant to double capacity and will require additional equipment.

BRIDGEPORT, CONN.—Eagle Construction Co., 80 Bishop avenue, is having plans made for a plant for the manufacture of portable houses.

Where additional information is presented, reference is made to date of issue in which previous item appeared.

NEW HAVEN, CONN.—C. W. Mettler, 132 Lawrence street, is building a 1-story machine shop 25 x 100 feet.

WALLINGFORD, CONN.—W. A. Ives Mfg. Co., manufacturer of screw drivers, bits and other tools, C. J. Benham president, will build a 1-story addition 65 x 245 feet.

WATERBURY, CONN.—Lockfast Corp. has been incorporated with $15,000 capital by John Draher and Adolph Krieger, Waterbury, and Leon V. Myles and Fannie Hershey, New York.

NEWPORT, DEL.—Wilmington Pattern & Mfg. Co. has completed its plant 50 x 70 feet for the manufacture of patterns. Samuel H. Caufman is president and general manager.

WASHINGTON—Central Armature Works Inc., 635 D street northwest, has let contract to Bahen & Wright, 1214 New York avenue northwest, for a 3-story plant 30 x 200 feet.

TAMPA, FLA.—F. P. Lyons Iron Works Inc. has let contract to G. A. Miller Co. for the first unit of a steel fabricating plant in the Harris Terminals on Fifth avenue.

KELLOGG, IDAHO—Sullivan Mining Co. has awarded contract to Williams, Richardson & Reese Inc. for excavation and concrete work on the first main unit of the zinc smelter to be erected here.

CHICAGO—Butler Street Foundry & Iron Co., 3424 Normal avenue, is rebuilding its burned foundry 60 x 267 feet.

CHICAGO—National Machine Works, 1559 Sheffield avenue, will build a 1-story pattern shop 50 x 147 feet. W. D. Mann, 32 West Randolph street, is architect.

CHICAGO—Automatic Safety Trip Corp., 2610 Diversey avenue, has been incorporated to manufacture machines, parts and appliances by Edmund J. Henke, Howard A. Brundage, and Joseph Foran. Brundage & Gorman, 111 West Washington street, are correspondents.

GARY, IND.—Walter Bates Steel Corp. East Fifth avenue, will build an addition to its plant.

ROCKFORD, ILL.—Central Iron Co., A. Buske manager, will build a 1-story machine shop 50 x 150 feet. Contract to William Buske, 720 Elm street.

EVANSVILLE, IND.—Evansville Enameling Co., Julius Ritter manager, is having plans drawn for a 1-story addition to its plant.

HAMMOND, IND.—Anderson & Vail Stamping Co., Chicago, will build plant for the manufacture of metal stampings at Columbia avenue and 150th street.

PLYMOUTH, IND.—Plymouth Metal Working Co. will build a 1-story addition 50 x 150 feet.

PLYMOUTH, IND.—Plymouth Castings Co. has been incorporated with $10,000 capital to manufacture malleable castings by Joseph B. Lewis, John E. Fogarty and Emma Lewis.

SOUTH BEND, IND.—Studebaker Corp. will build a large storage warehouse to store completed cars awaiting shipment.

DENISON, IOWA—Illinois Central railroad, 135 East Eleventh place, Chicago, will build a modern coal chute to be used as coaling point between Council Bluffs and Ft. Dodge, to cost $100,000.

DENISON, IOWA—Improvements being made to the municipal light plant include the removal of four boilers of 150-horsepower each, the installation of two boilers of 250-horsepower each, new soot blowers and stokers and an automatic underfed appliance for firing, to cost $30,000.

LOUISVILLE, KY.—Jackson Body Co. Inc has been incorporated with $30,000 capital by Frank Jackson, 2123 Garland street.

NEW ORLEANS—Glenny Buick Co. will build new addition on Maronne street to include modern garage and repair shop.

BALTIMORE—Hardware Corp. of America 443 Calvert building, has been incorporated with $100,000 capital by Hyman Sandler and associates.

INDIAN ORCHARD, MASS.—Chapman Valve

Iron and Manganese Ores and Minerals

Iron Ore

LAKE SUPERIOR ORES

Per Gross Ton Lower Lake Ports

Old range bessemer, 51½ per cent iron	$4.55
Mesabi bessemer, 51½ per cent iron	4.40
Old range nonbessemer, 51½ per cent iron	4.40
Mesabi nonbessemer, 51½ per cent iron	4.25

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 53 to 63 per cent	9.00 to 10.50
Copper free low phosphorus 53 to 65 per cent	nominal

FOREIGN IRON ORE

Cents per unit, f.o.b. cars Atlantic ports

Spanish low phosphorus, 52 to 54 per cent	10.00 to 11.00
North African low phosphorus	9.25 to 9.75
Swedish and Norwegian low phosphorus, 68 per cent	10.25 to 10.75
Swedish foundry or basic, 66 to 68 per cent	9.00 to 9.50
Spanish foundry or basic, 50 to 54 per cent	8.75 to 9.25
North African foundry and basic 50 to 54 per cent	8.50 to 9.50

(All foreign ore prices now nominal)

Manganese Ore

Prices do not include duty at rate of 1 cent per pound of metallic manganese contained.

Brazilian, minimum, 47 per cent, 34 to 36 cents	
Indian, minimum 47 per cent	34 to 36 cents
Caucasian, 53 to 55 per cent	
Washed	nominal

Fluor Spar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$18.00
Washed gravel, imported duty paid eastern tidewater, per ton	16.75 to 17.50

Co., Pine street, Springfield, Mass. is building a 1-story machine shop 100 x 450 feet.

INDIAN ORCHARD, MASS.—The Chapman Valve Co. has closed on structural steel to the American Bridge Co. for a plant addition.

WORCESTER, MASS.—Johnson Steel & Wire Co. has been incorporated with $125,000 capital and 100 shares no par value to manufacture wire and wire products by Charles D. Johnson president, George G. Johnson vice president and treasurer, 24 Lakewood street, Worcester, Mass.

WORCESTER, MASS.—Paragon Oil Equipment Co. has been incorporated with $50,000 capital to manufacture oil burners and equipment by Bernard F. Sacks president, Edward H. Jennings treasurer, 300 Allen street, New Bedford, Mass., and Joseph J. Jennings.

DETROIT—Peninsular Stove Co. has bought 18½ acres at Burt road and Pere Marquette railroad as a site for its new plant to provide a 50 per cent increase in capacity.

DETROIT—Aeronautical Industries Inc. has been incorporated with 20,000 shares no par value to manufacture aircraft and accessories by Earl W. Hamman, 1149 Virginia Park; Rochwell T. Gust and Fred J. Kennedy.

DETROIT—Bigelow Arch Co. has been incorporated with $1000 capital and 49,000 shares no par value to manufacture furnaces, walls and arches by Frank B. Bigelow, Detroit; William L. Bigelow, Pittsburgh, and Truman M. Bigelow, Detroit.

JACKSON, MICH.—Handley-Brown Heater Co. has been incorporated with $10,000 capital to manufacture gas and electric apparatus by William J. Handley, James A. Brown, Jackson, Mich.; William H. Barthold, New York.

MUSKEGON, MICH.—March Irrigation Co., Western avenue, manufacturer of irrigation supplies, will build a 2-story office 45 x 66 feet and 1-story plant 66 x 200 feet on Bank street.

ROGERS CITY, MICH.—Michigan Limestone & Chemical Co. has awarded general contract to Pfeffer Construction Co., 402 Builders Exchange, Duluth, Minn., for 2-story factory 75 x 250 feet.

WAKEFIELD, MICH.—Wakefield Crushed Stone Co. has begun work on a 50 x 110-foot steel and concrete machine shop.

FERGUS FALLS, MINN.—Northwestern Sash & Door Co. will build 2-story, 70 x 80-foot addition to warehouse and planing mill.

MINNEAPOLIS, MINN.—Russell Grader Mfg. Co., 2005 University avenue SE, has awarded general contract to Lindh-Gustafson-Klopfer Co., 315 NE. Fifth street, for 2-story addition to factory. Sund & Dunham, 512 Essex building are architects.

MINNEAPOLIS, MINN.—Leonard Paulle has awarded general contract to J. & W. Elliott Co., 905 Lumber Exchange, for 2-story 98 x 140-foot addition to factory at Seventh street and Bryant avenue North, to cost $60,000.

JACKSON, MISS.—Ray Wright Sheet Metal & Tile Works has been incorporated with $100,000 capital to manufacture sheet metal products by Ray Wright and W. D. Wright.

JACKSON, MISS.—A corporation is being organized to manufacture portland cement, with $3,000,000 capital by O. K. Taylor, M. T. Bynum. A. L. Goodman, R. H. Pate and Hugh K. Mahon Jr.

JOPLIN, MO.—Empire District Electric Co. plans expenditure of $4,000,000 for improvements and plant extensions including a 35,000-horsepower turbine generator and boilers and auxiliary equipment at its Riverton, Kans., power plant. J. E. Harsh is general manager.

KANSAS CITY, MO.—Hurst Scrap Iron & Metal Co., 8 West Tenth street, will make extensions to its plant and add new equipment.

KANSAS CITY, MO.—Austin Western Road Machinery Co., 2139 Washington street, has bought site 125 x 135 feet on Woodsweather road and will build assembling and distributing plant 90 x 125 feet.

KANSAS CITY, MO.—Acme Pipe & Metal Co., 1527 Walnut street, has purchased site 120x180 feet containing 1-story brick building for new plant location. H. B. Strauss is general manager.

ST. LOUIS—Woodward & Co. has been incorporated to manufacture lighting fixtures by E. B. Henderson, 3911 Fairview street.

ST. LOUIS—McGraw Electric Appliance Co. has been incorporated with $500,000 capital by C. F. Leake and H. H. Morehouse.

ST. LOUIS—Anheuser Busch Inc. 720 Pestalozzi street, has let contract to the Kenton Construction Co., Wainright building, for a 2-story plant for the manufacture of conveying machinery .

ANACONDA, MONT.—Montana Power Co. is making surveys for electrifying the Marysville and Gould mining fields.

LINCOLN, NEBR.—Chicago, Burlington & Quincy railroad, 547 West Jackson boulevard, Chicago, will begin work soon on wrecking present passenger station and build a new 3-story 72x291 limestone and brick passenger station on Seventh street. A. W. Newlon is chief engineer.

EAST NEWARK, N. J—St. Clair Products Inc. has been incorporated with $100,000 capital to manufacture iron products and tools, by Raymond S. C. Fow, John Hewitt, and John J. Hewitt, East Newark, N. J., and John Middlebrook, Irvington, N. J.

EDGEWATER, N. J.—The Spencer-Kellogg & Son Co. has placed structural steel for a plant addition.

JERSEY CITY, N. J.—New Durham Machine Works Inc. has been incorporated with $50,000 capital by Louis Nees, Harry Anderson, Paul R. Zimmer, North Bergen, N. J. Julius T. Reich, Jersey City, is attorney.

JERSEY CITY, N. J.—The Erie railroad has closed on structural steel for a refrigerator warehouse, and is in the market for another tonnage for approach work to the warehouse.

ALBANY, N. Y.—Delaware & Hudson Co., Albany, has let general contract to the Austin Co., Cleveland, for a 1-story machine shop and warehouse.

BROOKLYN, N. Y.—State Iron Works has been incorporated with $100,000 capital by S. Kolodim, A. Baugh and R. Bernstein. J. K. Polikoff, 1133 Broadway, is attorney.

BROOKLYN, N. Y.—American Clock Mfg. Co. has been incorporated with $20,000 capital by E. Antikes and G. Ankus, 49 West Seventy-first street, N. Y.

BROOKLYN, N. Y.—Gamburg & Silverman have been incorporated with 100 shares no par value to operate an iron works by R. M. Gamburg, H. S. Silverman and F. Natbody. H. Ginsburg, 253 Livonia avenue, is attorney.

BROOKLYN, N. Y.—The F. Wesel Mfg. Co., 72 Cranberry street, manufacturer of stereotype equipment, is moving to Scranton, Pa., and is now inquiring for structural steel for a plant in that city.

BUFFALO, N. Y.—Ahrens-Hager Machine Tool Corp. has been incorporated with $20,000 capital by H. F. Ahrens, C. Hager and B. B. Hager. Jackson, Dadama & Piper, Buffalo, are attorneys.

JAMESTOWN, N. Y.—The Jamestown Metal Desk Co. has closed on structural steel for a plant addition. The Warren Construction Co. is general contractor.

LONG ISLAND CITY, N. Y.—Neptune Meter Co., 50 East Forty-second street, New York, has let contract to C. Curtis Woodruff Co., 213 Tenth avenue, Long Island City, for a 3-story plant 40 x 40 feet and 50 x 125 feet.

LONG BEACH, N. Y.—Gibbs Engineering Corp. has been incorporated with $20,000 capital to manufacture mechanical devices by J. A. Lestrange, D. Vangeli and H. Kestenbaum. A. A. Vigard, 1440 Broadway, New York, is attorney.

NEW YORK—Norfolk Sheet Metal & Roofing Co. has been incorporated with $10,000 capital by A. Bruck, S. Berkowitz and I. Gross. F. Trow, 236 West Forty-fifth street, is attorney.

NEW YORK—Detachable Bit Corp. of America, 25 Broadway, has been organized to manufacture detachable rock drills, mits, couplings and shanks, with 100,000 shares no par value.

NEW YORK—Lester Rebak & Co. has been incorporated with $9000 capital to manufacture art metal work, by Rebak, S. Nagy and H. Rahtz. H. Moercher, 50 Union Square, is attorney.

NEW YORK— Torino Wrought Iron Mfg. Co. has been incorporated with $10,000 capital by E. Jaslow, I. Ferrauto and E. J. Haas. A. E. Marks, 25 West Forty-third street, is attorney.

NEW YORK—Sanitary Automatic Candy Shop has been incorporated to manufacture vending machines, with $10,000 capital, by T. Greenberg, A. J. Lippi and S. Michlike. I. A. Hirscher, 965 Hoe avenue, is attorney.

NEW YORK—Abbott Contracting Corp. has been incorporated with 100 shares no par value to manufacture foundry supplies by H. Wolfe, A. Toplitz and R. Cohen. A. H. Brown, 198 Broadway, is attorney.

NEW YORK—Joseph Capone Electrical Co. has been incorporated with $5000 capital to manufacture electrical fixtures by C. Kaplan, and R. Nasoff. E. V. Moran, 2 Rector street, is attorney.

NEW YORK—Nonel Plumbing & Heating Specialties has been incorporated with 100 shares no par value by B. Warshouser and A. Cohen. M. Corin, 220 Broadway, is attorney.

NEW YORK—F. A. D. Andrea Inc., 1581 Jerome avenue, will build a 4-story plant 159 x 225 feet, for the manufacture of radio equipment. Ballinger Co., 100 East Forty-second street, is architect.

NEW YORK—Anglo-American Trading Co. has been incorporated with 500 shares no par value to handle metal products by E. M. Stalneck, C. N. Townsend and S. Marin. Straley & Haebrouck, 256 Broadway, are attorneys.

NEW YORK—Amateur Motion Picture Equipment Corp. has been incorporated with $300,000 capital to manufacture motion picture projection machines by L. L. Cook, and C. R. Scheiner. C. W. Gould, 177 West Sixty-ninth street, is attorney.

NEW YORK—Waterbury Cable Service has been incorporated with 250 shares no par value to manufacture wire and pipe by M. L. Kelleher, E. I. Lindsay and M. V. Nolan. Delehanty, Griffin, Hannon & Evans, 115 Broadway, are attorneys.

ONEONTA, N. Y.—Delaware & Hudson

railroad, C. Gore, general manager, Plaza building, Albany, N. Y., has let contract to the Austin Co., Cleveland, for a 2-story machine shop 130 x 230 feet.

TONAWANDA, N. Y.—Landon Radiator Co., Archer A. Landon president, 1104 Marine trust building, Buffalo, has let contract to Crooker & Carpenter, Crosby building, Buffalo, for a 1-story addition 24 x 50 feet and alterations to its plant.

ALLIANCE, O.—Alliance Tank Co., E. L. Coble president, is building first unit of a new plant, 54 x 101 feet, and its office building. Equipment, electrically operated has been bought.

CINCINNATI—Bock Machine Co., 3618 Colerain street, will build a 1-story machine shop addition.

CLEVELAND—Cleveland Heater Co., 1900 West 112th street, has given contract to Sam W. Emerson Co. for an addition 100 x 250 feet.

CLEVELAND—New Era Electric Co. has let contract to M. Cadkin for an addition to its plant at 6901 Machinery avenue.

CLEVELAND—Geometric Stamping Co., 221 East 131st street, has let contract to the Boldt Rapp Co., 5511 Euclid avenue, for a 1-story addition 115 x 137 feet.

CLEVELAND—Case School of Applied Science is building an addition to its electrical engineering building to house transformers and generators.

DAYTON, O.—Superior Casting Co., foot of Perry street, has let contract to Ostendorf-Harris Co. for a 1-story plant 41 x 240 feet.

LIMA, O.—Gorrell Carnes Foundry Co. has been incorporated with $25,000 capital by J. A. Gorrell, E. P. Gorrell, J. R. Carnes, K. W. Carnes and R. MakKenzie.

BARTLESVILLE, OKLA.—Empire Gasoline Co. has awarded contract to C. & G. Cooper Co. for four 170-horsepower direct driven compressor units as addition to its gasoline plant at Seminole, Okla.

LAWTON, OKLA.—Southwestern Light & Power Co. will spend $500,000 in improvements and plant additions including a 20,000-kilowatt substation generating unit at Lawton and a 10,000-kilowatt generating station at Elk City, and 141 miles of transmission line.

OKMULGEE, OKLA.—Oklahoma Power Co., C. H. Krets, vice president, has started construction of a 15,000-kilowatt generating station on North Canadian river near Weleetka, Okla. A 60,000-volt transmission line about 60 miles long will connect with the main plant at Tulsa. The new plant will serve the oil field territory and industrial plants.

TULSA, OKLA.—Empire Chandelier Mfg. Co. has been incorporated with $50,000 capital by C. B. Johnson and W. J. Smiley.

TULSA, OKLA.—Hudson Wire & Iron Co. has added galvanizing plant, 30x60 feet, also warehouse, 40x80 feet, for handling heavy hardware, at Fifth and Troost streets.

TULSA, OKLA.—Sinclair Oil & Gas Co. has placed order with C. & G. Cooper Co. for nine 170-horsepower two-stage direct connected compressor units for new oil lift station at Covington, Okla. Additional units will probably be added.

BEAVER FALLS, PA.—Standard Steel Specialty Co. is building a 1-story addition 60 x 90 feet.

CALLERY, PA.—National Metal Products Co., 1025 Chateau street, Pittsburgh, will build a 1-story plant 60 x 170 feet, for the manufacture of metal specialties.

CHARLEROI, PA.—Charleroi Steel & Foundries Co. has been incorporated with $5000 capital to manufacture steel and iron foundry products by John K. Tener, R. C. Mountser, George W. Might, E. R. Collins, David M. McCloskey, Charleroi.

Refractories

FIRE CLAY BRICK

Per 1000 f.o.b. works

Pennsylvania, No. 1	$40.00 to 43.00
Pennsylvania, No. 2	35.00 to 38.00
Ohio, No. 1	40.00 to 43.00
Ohio, No. 2	35.00 to 40.00
Illinois, No. 1	40.00 to 43.00
Illinois, No. 2	35.00 to 38.00
Kentucky, No. 1	40.00 to 43.00
Kentucky, No. 2	38.00 to 40.00
Missouri, No. 1	40.00 to 43.00
Missouri, No. 2	35.00 to 38.00
Maryland, No. 1	40.00 to 45.00
Maryland, No. 2	36.00 to 40.00
Georgia and Ala. No. 1	40.00 to 45.00
Georgia and Ala. No. 2	30.00 to 35.00

SILICA BRICK

Pennsylvania	43.00
Chicago	52.00
Birmingham	52.00

MAGNESITE BRICK

Per Net Ton Seaboard Base

9 x 4½ x 2½	65.00

CHROME BRICK

(Per Net Ton)

9 x 4½ x 2½	45.00

EPHRATA, PA.—Royer Mfg. Co. has been incorporated with $25,000 capital to manufacture light hardware and other metal products by Elam M. Royer and C. G. Royer, Ephrata, Pa., and J. H. Steham, Landisville, Pa.

ERIE, PA.—Metrie Metal Works, Bank H. Payne manager, Nineteenth street and Payne avenue, is considering plans for a foundry building.

MATAMORAS, PA.—Hayes Mfg. Co. has been incorporated with $200,000 capital to manufacture electric shears and parts. It has a plant already established.

PHILADELPHIA—Andale Engineering Co. has given contract to the Ferguson Co., Cleveland, for a plant 92 x 102 feet, steel and concrete.

PHILADELPHIA—Keystone Supply & Mfg. Co., 927 North Ninth street, will build a 1-story pipe shop 95 x 100 feet at Camden, N. J.

PHILADELPHIA—Richard L. Binder, care Metals Coating Co., 497 North Third street, is having plans drawn for a 1-story addition 30 x 100 feet and alterations to its 5-story plant.

PHILADELPHIA—A $155,000 service building and machine shop will be erected by the Davis Buick Co., Pulaski and Woodlawn streets. The general contract has gone to Stoffle & Tillottson, Wesley building.

PHILADELPHIA—Hess & Barker has been incorporated with $50,000 capital to manufacture special machines, parts and metal specialties by Robert W. Barker, 634 North Sixty-fourth street, Margaret R. Barker, 112 Llanfair road, Synwyd, Pa., and Effingham B. M. Barker, 123 Washington plave, New York.

PHILADELPHIA—Alloy Steel Corp. has been incorporated with $25,000 capital to manufacture alloy steels by Wilbert C. Drechsler, Laurel Springs, N. J.; Arthur Wood, 258 Rector street, Roxborough, Philadelphia; J. Verner Harold, 204 Rochelle avenue, Wissahickon, Philadelphia and Carl A. Hopf, Linwood, N. J.

PITTSBURGH—Porcelier Mfg. Co. has been incorporated with $30,000 capital to manufacture lighting fixtures and electrical specialties by Hyman Tauber, 5423 Hobart street, Pittsburgh; Harry M. Tauber, 5618 Melvin street and Jacob Dym, 525 Gettysburg street, Pittsburgh.

STROUDSBURG, PA.—Sturdevant Mfg Co. has been incorporated with $50,000 capital to manufacture enameled ware by M. E. Sturdevant, Lynn E. E. Sturdevant and F. Grant Heller, Stroudsburg, Pa.; T. L. Dietz and W. E. Dirtz Harrisburg, Pa.

BRYANT, S. D.—City will purchase new Fairbanks-Morse diesel type 60-horsepower engine and generator to increase power in municipal power plant. H. C. Rice is city auditor.

WATERTOWN, S. D.—City will build an addition to municipal power plant and install a new 1500-kilowatt turbine. A. L. Mullergren, 765 Board of Trade building, Kansas City, Mo., is engineer.

MARYVILLE, TENN.—Shriver Foundry Co. will rebuilt its burned foundry plant 80 x 150 feet.

FORT WORTH, TEX.—Martin Mfg. Co. has been incorporated with $10,000 capital by T. S. Wade, 1312 Dorothy lane.

HOUSTON, TEX.—Automark Machine Co. has been incorporated with $900 capital by James G. Collin, Harry Stetler and Joseph Arsenaux.

NORFOLK, VA.—State Foundry Works of Virginia has been incorporated with $20,000 capital by R. E. Wood, 1612 A street, to manufacture grate bars for marine use.

RICHMOND, VA.—Sydnor Pump & Well Co. Inc., Thomas G. Sydnor president, 1310 East Main street, has increased capital from $100,000 to $150,000 and will make enlargement of capacity.

ROANOKE, VA.—Universal Lock Nut & Bolt Corp. has been incorporated by B. C. Moomaw, 412 South Jefferson street.

SEATTLE—Precision Machine Co. has been incorporated with $35,000 capital by E. Linenschmidt and Walter Knight.

HUNTINGTON, W. VA.—Bailey-Hall Machinery Co. has been incorporated with $50,000 capital to manufacture road-building machinery and similar products by Thomas F. Bailey, 54 Kingshighway and may occupy plant of Steel Products Co., Twentieth street.

WELLSBURG, W. VA.—Ohio Valley Industrial Corp. and G. W. Kerr, Cleveland, are interested in a steel mill here.

ALGOMA, WIS.—A charter has been granted to the Metal Specialty Co., capital stock $50,000, to manufacture metal products. Incorporators are Joseph J. Schmitt, Mark F. LaFond, Charles Schmitt and Ernest Watz.

BELOIT, WIS.—The Pittsburgh-Des Moines Steel Co., Chicago office, has been awarded the contract for a new 200,000-gallon steel tank on a 15-foot steel tower for the municipal water plant here.

BLANCHARDSVILLE, WIS. — Wisconsin Power & Light Co., Gay building, Madison, has awarded general contract to L. M. Weber, 1160 Emerald street, Madison, for 30x74-foot addition to power plant, to cost $40,000.

CLINTONVILLE, WIS.—Patterson Speedometer Co. will remodel building on South Main street to be used for factory.

MILWAUKEE—The Wisconsin Cylinder Co. has moved into its new plant at 719 National avenue, where increased facilities are available for grinding cylinders of all sizes, specializing in custom grinding for garages and machine shops. Herman Kiekow is proprietor.

RACINE, WIS.—Architect J. Mandor Matson has completed plans for the proposed new William Horlick high school here and bids probably will be asked Nov. 18 to 25. The cost will be about $500,000.

RIVER FALLS, WIS.—The general contract for a new $200,000 high and vocational school here has been let to the J. B. Nelson Construction Co., Mankato, Minn. Architects Ellerbe & Co., 692 Endicott building, St. Paul, Minn., are in charge.

ROTHCHILD, WIS.—Marathon Paper Mills Co. has awarded general contract to Schaefer & Olson, Chippewa Falls, for 2-story, 40 x 83-foot building, to cost $30,000. Orbison & Orbison, Appleton, are engineers.

STOUGHTON, WIS.—City will build new electric light plant at Dunkirk. Power Engineering Co., 621 Metropolitan Life building, Minneapolis, Minn., is engineer.

WISCONSIN RAPIDS, WIS.—American Carbonic Machinery Co. will build an addition to its factory. Otto Roenius is the president.

Business in Canada

FORT WILLIAM, ONT.—Plans are under way in connection with work to be started early next year in program of the Fort William Paper Co. for enlarging its mills and increasing production, according to a statement made by George R. Gray, vice president.

HAMILTON, ONT.—Hamilton Stove & Heater Co., care Warren & McDonnell, architects, 72 James street North, is having alterations made to a building on Catharine street, which will be equipped with machinery for manufacturing purposes.

HAMILTON, ONT.—Steel Co. of Canada, Ltd., is installing machinery for the manufacture of chain link fencing. The equipment being installed will enable the company to supply styles, from ⅝-inch mesh up to 4-inch mesh, using wire from 19 gage to 6 gage, in width up to 10 feet.

MIDLAND, ONT.——Midland Shipbuilding Co. has received a contract from the Canada Steamship Lines, Ltd., 9 Victoria square, Montreal, for the building of two steel freighters, and will buy material and equipment for them.

PETERBOROUGH, ONT.—Construction is under way on an impregnating building here in connection with the plant of the Canadian General Electric Co., Park street. H. T. Hickey, 5 Flemming place, is general contractor.

ST. THOMAS, ONT.—Pere Marquette railroad, Elm street, will make changes in its machine shops here, and proposes to equip all with motors at a cost of $70,000.

TORONTO, ONT.—Canadian Furmanite, Ltd., has been incorporated to manufacture metal products with $50,000 capital stock, by Lancing B. Campbell, William A. Riddell, Albert Perry and others.

TORONTO, ONT.—Elpeco of Canada, Ltd., has been incorporated to manufacture electrical equipment and appliances with $50,000 capital stock by Bertha G. Clements, Birdie Smith, Edward Ryckman and others.

TORONTO, ONT.—Sagamo Meter Co., 183 George street, whose plant was recently destroyed by fire has awarded a number of contracts in connection with new factory here to cost $35,000.

TORONTO, ONT.—Keweenaw Silver Mines, Ltd., has been incorporated to mine, smelt and refine ores, metals and minerals; with $1,000,000 capital stock by William S. Walton, Percy C. Finley, Florence M. Thompson and others.

TORONTO, ONT.—William & J. G. Grey, Ltd., has been incorporated to carry on business as iron founder, engineer and manufacturer of machinery; 1000 shares no par value by George M. Huycke, Norman E. Strickland, Clifford G. Lynch, and others.

WINDSOR, ONT.—W. J. Douglas Co., Ltd., has been incorporated to manufacture tools, nails, screws and farm implements with $75,000 capital stock by William J. Douglas, Mary Douglas, Martin J. Wigle and others.

MONTREAL, QUE.—Standard Paper Box Co. Ltd., 6240 Park avenue, will build a factory addition to cost $20,000.

MONTREAL, QUE.—Sub-trades will be let in connection with $100,000 boiler house to be erected here for the Canada Sugar Refinery Co.

QUEBEC, QUE.—Application has been made to the Quebec public service commission by the Canadian International Paper Co. for permission to build a large power plant on Mountain Falls on the shore of the Red river in the county of Argenteuil, Que. A dam 125 feet high by 200 feet wide will be built and a power plant to develop 40,000 horsepower will be erected at this point.

New Trade Publications

CUTTING-OFF TOOL—A leaflet by Luers Inc., Cincinnati, illustrates its cutting-off tool and describes its advantages.

MOTORS—Totally enclosed, fan-cooled direct-current motors are described and illustrated in a bulletin by the General Electric Co., Schenectady, N. Y.

PARALLEL DRIVES—Boston Gear Works Sales Co., Norfolk Downs, Mass., has issued a pocket-size catalog of its parallel drives with full specifications and description.

INDUSTRIAL ELECTRIC HEATING—Sta-Warm Electric Heater Corp., Ravenna, O., has issued a bulletin covering its industrial heating devices for various uses.

PYROMETER CONTROLLER—Bristol Co., Waterbury Conn., has issued a bulletin covering automatic temperature control in heat treatment of steel by means of its devices.

GRAPHIC METERS—Meters to record the performance of automatic stations are described in a bulletin by the Esterline-Angus Co., Indianapolis. Installations are illustrated and sample charts shown.

REFRACTORY CEMENT—A bulletin describing the experience of a steelmaker in using its refractory cement in laying fire brick has been issued by the Botfield Refractories Co., Philadelphia.

ELECTRIC FIXTURES—Safety switch conduits manufactured by the Crouse-Hinds Co., Syracuse, N. Y., are shown in a folder issued by the firm. Various types of plug receptacles also are shown.

ABRASIVES—The Carborundum Co., Niagara Falls, N. Y., has issued a catalog describing an improved wheel chuck for grinding. Features of construction and mounting of abrasive segments are presented.

CARBON MONOXIDE METER—Bacharach Industrial Instrument Co., Pittsburgh, has issued a leaflet on its electric meter for measuring carbon monoxide in the adjustment of high speed internal combustion engines.

NICKEL STEEL—International Nickel Steel Co., 67 Wall street, New York, has issued a broadside graphically depicting uses of its alloy steel to give strength where the stress comes.

AIR CHUCKS—Skinner Chuck Co., New Britain, Conn., has issued a catalog of its wrenchless chucks, air operated, showing them in operation and giving details of construction and data.

TESTING SIEVES—W. S. Tyler Co., Cleveland, has published a 56-page catalog describing sieves for testing purposes. Screen sizes for various tests are presented with suggestions for testing materials.

TUMBLING MILL—A continuous tumbler for cleaning of castings is described in a pamphlet published by the J. W. Paxson Co., Philadelphia. The tumbler is said to be self-feeding, continuous, automatic and dustless.

INDUSTRIAL HEATING—Unit heaters of the fan or blower type are shown in a catalog published by the Buffalo Forge Co., Buffalo. The heaters may be placed in various positions about the shop to maintain a constant temperature.

PERMANENT MOLD—Machines for manufacturing permanent mold castings are shown in a folder issued by the Holley Carburetor Co., Detroit. Molds for different types of castings are illustrated with estimated production for each.

STEEL WINDOWS—Mechanisms for opening and closing steel windows in industrial buildings are described in a catalog issued by the Truscon Steel Co., Youngstown, O., These devices are for hand or motor operation and simplify greatly the control of large continuous window areas.

FOUNDRY FLASKS—Alloy steel flasks for foundry use are described in a catalog issued by the Truscon Steel Co., Youngstown, O., Features of construction are shown by illustrations. These flasks are made in various shapes and sizes to fit the particular type of casting. Bottom boards, core boxes, pouring jackets, and many other foundry appliances also are described.

ARC WELDING—Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has issued a 31-page publication devoted to welding of structural steel. It deals with arc welded buildings at the East Pittsburgh works of this company, erection methods, tests and inspection of arc welds and the metallurgy of welding. It includes discussion of tests of actual joints and the results of tests by the Carnegie Institute of Technology.

FLEXIBLE SHAFT COUPLING—A flexible coupling introduced by W. H. Nicholson & Co., Wilkes-Barre, Pa., is illutsrated in a bulletin just issued. It is of metal throughout and misalignment is cared for by loose-fitting floating keys with bevel sides. These keys by centrifugal action engage in slots, the entire interior of the coupling being filled with oil to insure easy running. Full details of construction are shown in illustrations.

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount or $4 per ton higher net.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis or $5 per ton higher net.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½

Lap Weld

2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	45½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld

1 to 3-inch	60	48½

Lap Weld

2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld

⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½

Lap Weld

2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld

½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½

Lap Weld

2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis.

THREADS AND COUPLINGS

Butt Weld

¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	18

Lap Weld

1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 6-inch	26	11
8 to 6-inch	28	13
7 to 12-inch	26	11

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG, PLAIN ENDS

¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14

Lap Weld

2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld

½-inch	+47½	+59½
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39

Lap Weld

2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh less carload discounts. Carload 4 points larger

STEEL (Lap Welded)

2 and 2¼-inch	28 off
2½ and 2¾-inch	33 off
3-inch	36 off
4¼ to 3¾-inch	38½ off
4 to 13-inch	42 off

(Note—Additional discounts of 5 to 7 extra 5 per cents now being given.)

CHARCOAL IRON

1½-inch	+22
1¾-inch	+12
2 and 2¼-inch	+ 2
2½ to 3-inch	3
3¾ to 4½-inch	5

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS COLD DRAWN

1-inch	56 off
1¼ and 1½-inch	48 off
1¾-inch	32 off
2 and 2¼-inch	27 off
2½ and 2¾-inch	35 off
3-inch	41 off
3¼ and 3½-inch	43 off
4-inch	46 off
4½, 5 and 6-inch	41 off

SEAMLESS HOT ROLLED

2 and 2½-inch	30 off
2½ and 2¾-inch	38 off
3-inch	44 off
3¼ and 3½-inch	46 off
4-inch	49 off
4½, 5 and 6-inch	44 off

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.20 per cent.....50 to 55 off

Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Net prices per foot f.o.b. Pittsburgh

Outside diameter	Gage	Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11-gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅝-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates, Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including 115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c

Plates less than ¼-inch or lighter than 11 pounds per square foot.

Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c

Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.

GAGE

Plates not Exceeding 72 inches Wide

Plates less than ¼-inch gage, to and including $\frac{7}{16}$-inch; or lighter than 10.2 pounds per square foot to and including 7.65 pounds per square foot..... .20c

Plates over 72 Inches Wide

Plates less than ¼-inch gage, to and including $\frac{7}{16}$-inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot ..... .20c

Plates ordered 7.65 pounds per square foot ..... .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull material subject to U. S. Navy Dept. Specifications for Medium or Soft Steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. Specifications, classes A and B	1.50c

Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet....No extras

Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.10c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

With not more than four straight cuts. (Including straight taper plates)

Additional extra ..... .10c

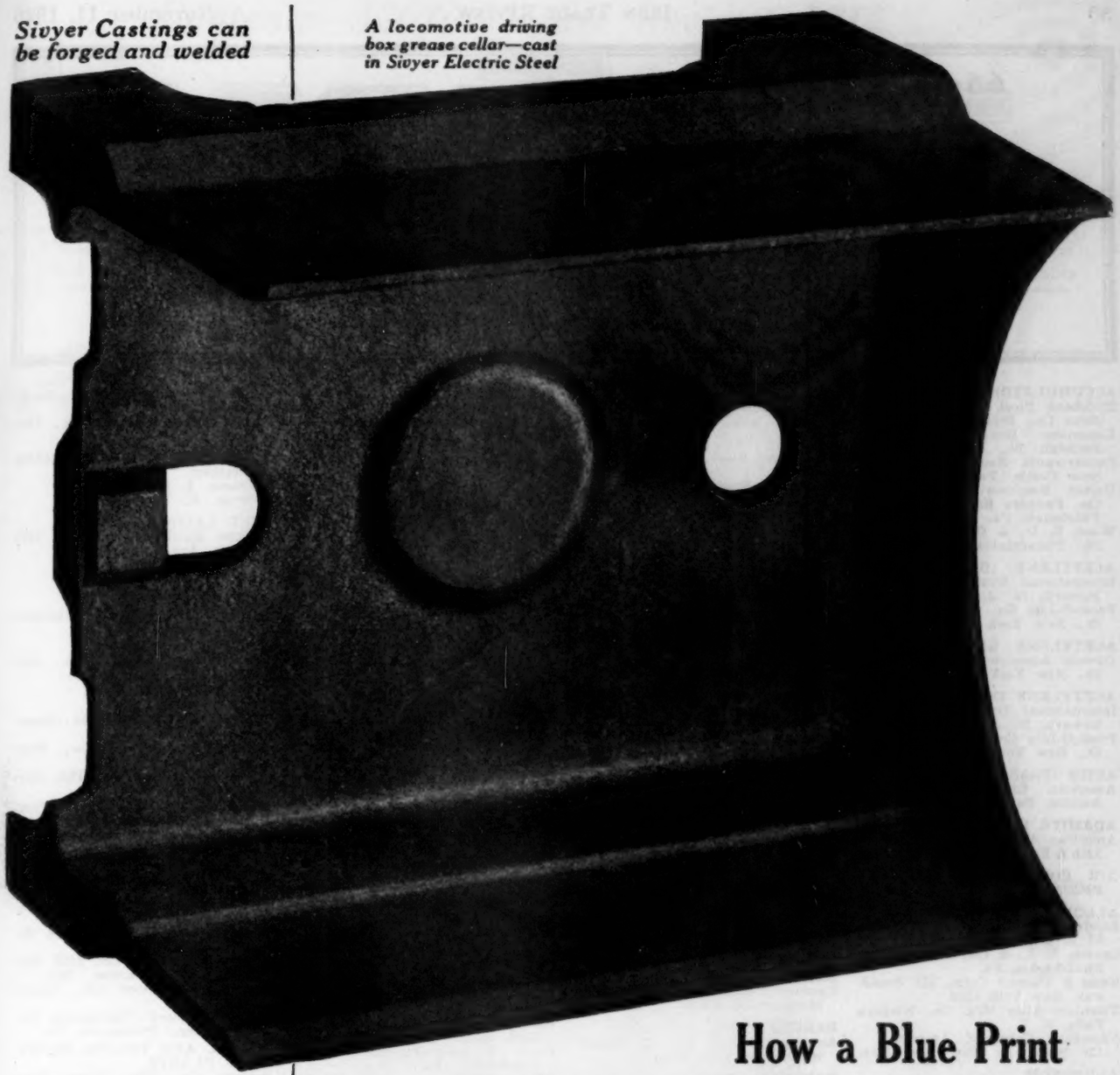
Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared wiht re-entrant angles)

Additional extra ..... .20c

Sivyer Castings can be forged and welded

A locomotive driving box grease cellar—cast in Sivyer Electric Steel



SIVYER (S) CASTINGS

DEPENDABLE

Send Blue Prints

Sending blue prints of the parts that are not giving the service that you think they should —parts that are too heavy —parts that are in constant danger of breakage—parts that incur high machining costs—may bring you a solution of your problems. Sivyer will make recommendations without obligating you in any way.

How a Blue Print Saved 20 Pounds and Stopped Breakage

This casting fits inside the driving box of a locomotive and carries the lubricant for the axle. When made in cast iron this part weighed 55 pounds—and its metal sections were 5/8 and 3/4 of an inch thick. The handling that the part received in roundhouses and repair shops resulted in high breakage cost and a relatively short life of service. The railroad turned to Sivyer. Blue prints of the part were sent for recommendations. As a result Sivyer Electric Steel has replaced the old-fashioned cast iron with a saving of 20 pounds in weight. In Sivyer Steel the part weighs but 35 pounds with metal sections of 5/16 of an inch. And breakage in handling is virtually eliminated.

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE

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